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SKU: 9780357454091-TEST-BANK

Section 1.1 - Graphs of Equations

1. Determine which of the following points lies on the graph of the equation.

$y = \sqrt{x + 62}$

a. (2, 10)
b. (2, 9)
c. (2, 8)
d. (9, 8)
e. (3, 8)

ANSWER: c
POINTS: 1
REFERENCES: 1.1.7
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 7/5/2021 11:58 PM

2. Determine which of the following points lies on the graph of the equation.

$y = |x - 2| + 4$

a. (5, 7)
b. (5, 9)
c. (5, 8)
d. (8, 7)
e. (6, 7)

ANSWER: a
POINTS: 1
REFERENCES: 1.1.11
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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3. Write the standard form of the equation of the circle with the given characteristics.

Endpoints of a diameter: (2, 2), (12, 2)

a. $(x - 7)^2 + (y - 2)^2 = 5$

b. $(x - 2)^2 + (y - 7)^2 = 25$

c. $(x + 2)^2 + (y + 7)^2 = 25$

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d. $(x+7)^2+(y+2)^2=25$

e. $(x-7)^2+(y-2)^2=25$

ANSWER: e
POINTS: 1
REFERENCES: 1.1.68
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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DATE MODIFIED: 5/8/2015 11:33 AM

4. Write the standard form of the equation of the circle with the given characteristics.

Center:(3, 1); Radius: 7

a. $(x-3)^2+(y-1)^2=49$

b. $(x-3)^2+(y-1)^2=7$

c. $(x-3)^2+(y-1)^2+7=0$

d. $x^2+y^2=0$

e. $(x-3)^2+(y-1)^2-49=0$

ANSWER: a
POINTS: 1
REFERENCES: 1.1.63
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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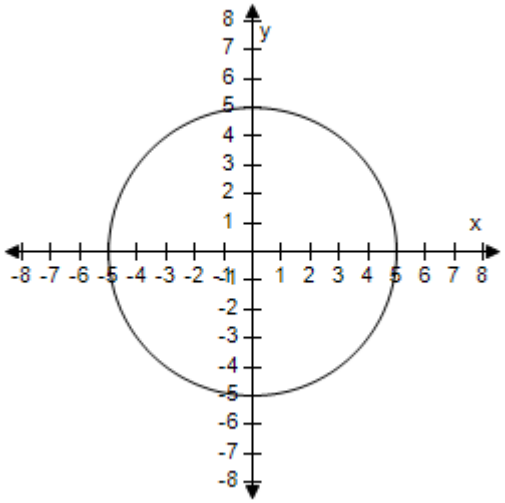
5. Find the center and radius of the circle, and sketch its graph.

$x^2+y^2=16$

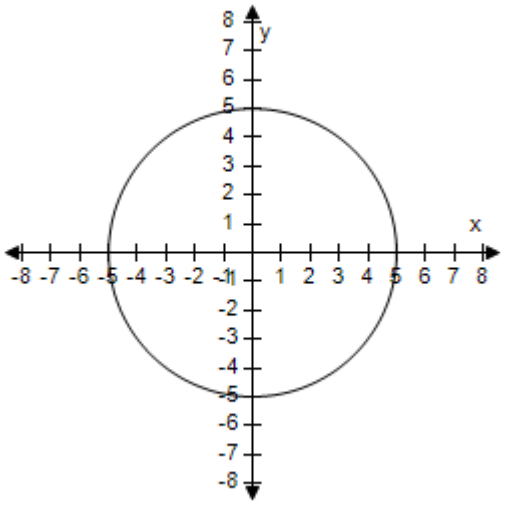
a. Center (0, 0), Radius 16

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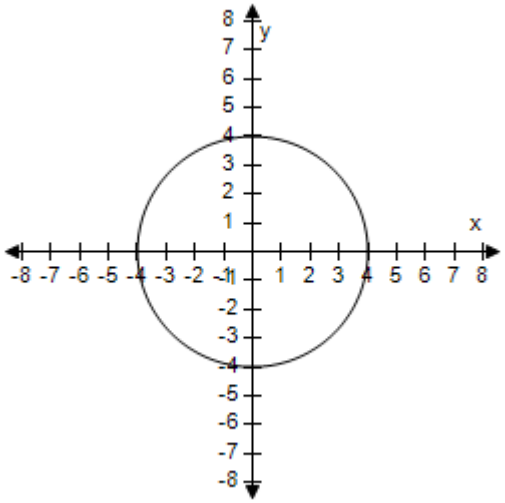
b. Center (0, 0), Radius 4



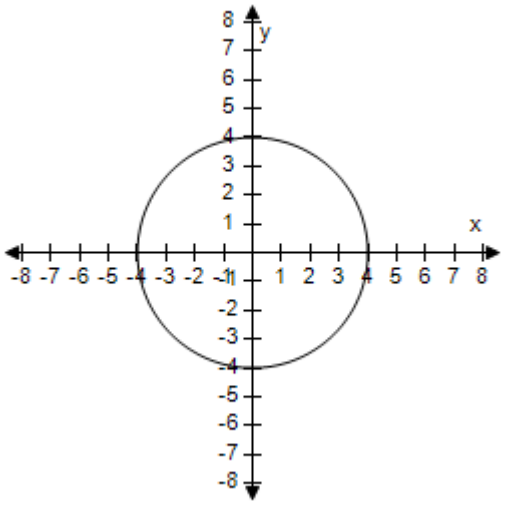
c. Center (0, 0), Radius 4

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d. Center (0, 0), Radius 16

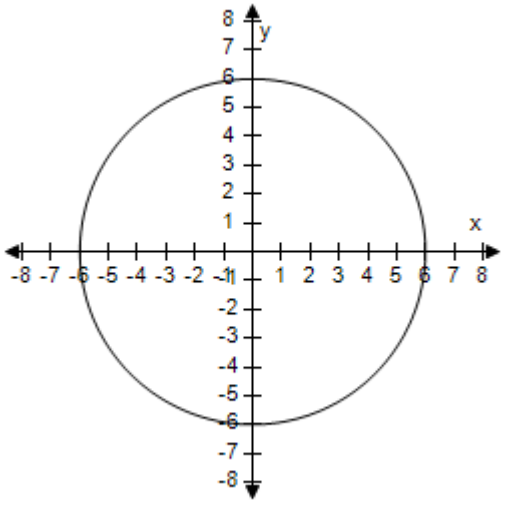


e. Center (0, 0), Radius 4

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Section 1.1 - Graphs of Equations



ANSWER: c
POINTS: 1
REFERENCES: 1.1.69
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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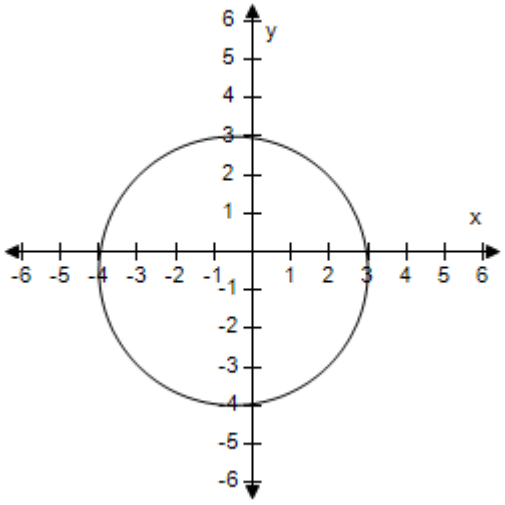
6. Find the center and radius of the circle, and sketch its graph.

$$\left(x-\frac{1}{2}\right)^2+\left(y-\frac{1}{2}\right)^2=\frac{49}{4}$$

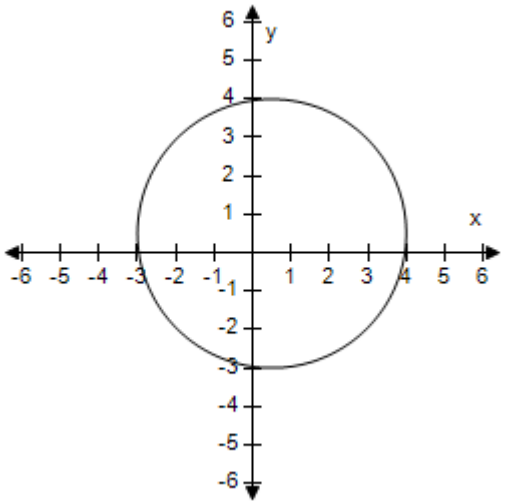
a. Center $\left(\frac{1}{2}, \frac{1}{2}\right)$, Radius $\frac{49}{4}$

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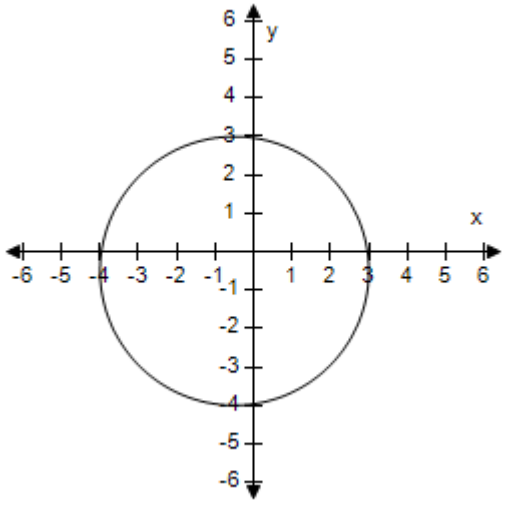
b. Center $\left(\frac{1}{2}, \frac{1}{2}\right)$, Radius $\frac{49}{4}$



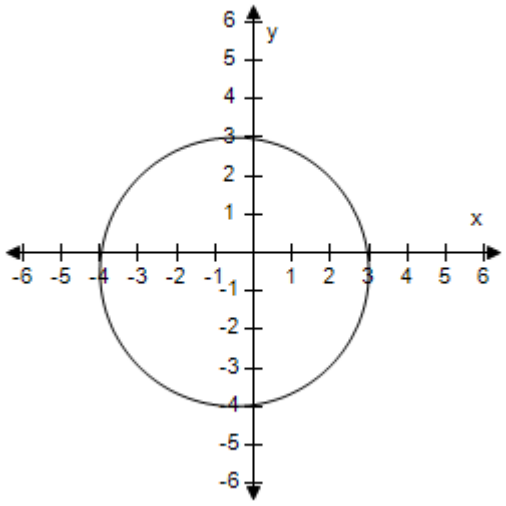
c. Center $\left(\frac{1}{2}, \frac{1}{2}\right)$, Radius $\frac{7}{2}$

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d. Center $\left(-\frac{1}{2}, -\frac{1}{2}\right)$, Radius $\frac{7}{4}$

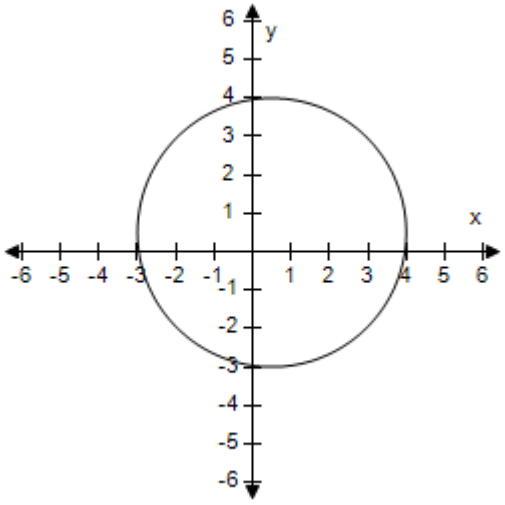


e. Center $\left(\frac{1}{2}, \frac{1}{2}\right)$, Radius $\frac{7}{2}$

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Section 1.1 - Graphs of Equations



ANSWER: e
POINTS: 1
REFERENCES: 1.1.73
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 7/5/2021 11:51 PM

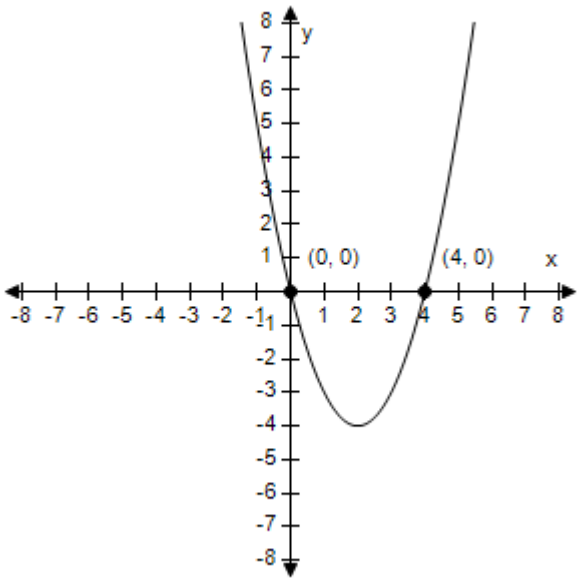
7. Identify any intercepts and test for symmetry. Then sketch the graph of the equation.

$y = x^2 - 4x$

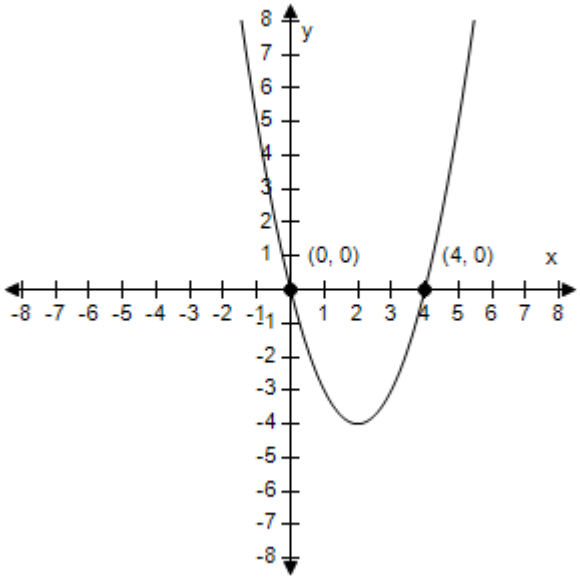
a. x-intercepts : (0, 0), (4, 0)
y-intercept : (0, 0)
No symmetry

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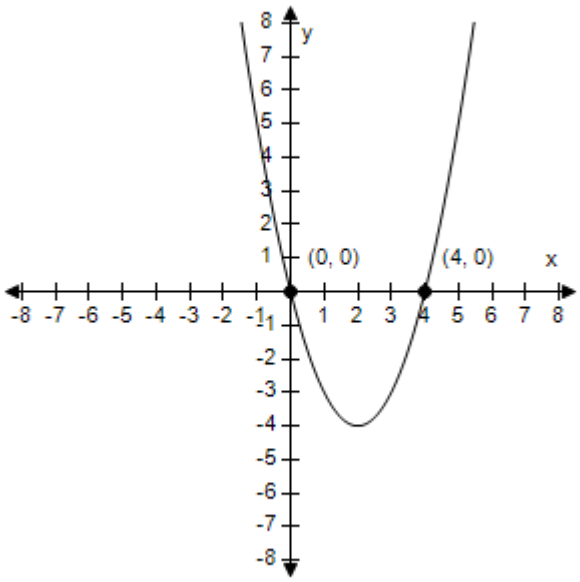
b. x-intercepts : (0, 0), (–4, 0)
y-intercept : (0, 1)
No symmetry



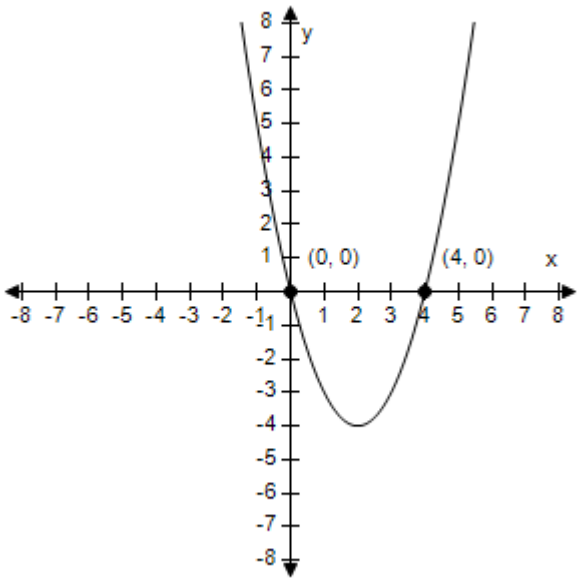
c. x-intercepts : (4, 0), (4, 0)
y-intercept : (0, 1)
No symmetry

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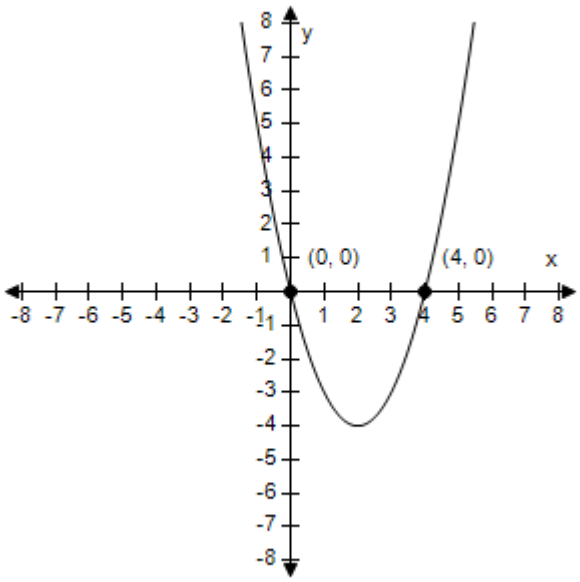
d. x-intercepts : (0, 0), (4, 0)
y-intercept : (0, 1)
No symmetry



e. x-intercepts : (0, 0), (4, 0)
y-intercept : (0, –1)
No symmetry

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ANSWER: a
POINTS: 1
REFERENCES: 1.1.39
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 7/5/2021 11:52 PM

8. Write the standard form of the equation of the circle with the given characteristics.

Center: (6, 1); Solution point: (5, 9)

a. $(x+6)^2+(y+1)^2=65$

b. $(x-6)^2+(y+1)^2-65=0$

c. $(x+6)^2+(y+1)^2+65=0$

d. $(x-6)^2+(y-1)^2=65$

e. $(x-1)^2+(y-6)^2=65$

ANSWER: d
POINTS: 1
REFERENCES: 1.1.66
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM

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Section 1.1 - Graphs of Equations

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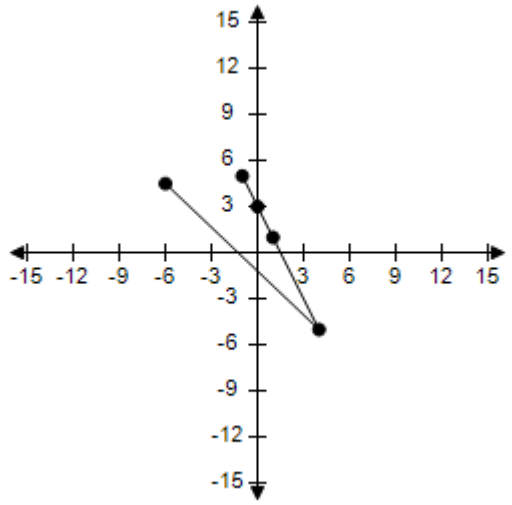
9. Complete the table. Use the resulting solution points to sketch the graph of the equation.

$y = -2x + 3$

x	–1	0	1	4	$\frac{9}{2}$
y					
(x, y)					

a.

x	–1	0	1	4	$\frac{9}{2}$
y	5	3	1	–5	–6
(x, y)	(–1, 5)	(0, 3)	(1, 1)	(4, –5)	$(\frac{9}{2}, 9)$

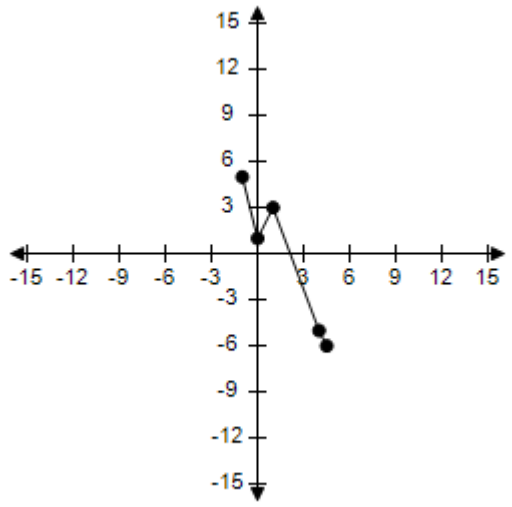


b.

x	–1	0	1	4	$\frac{9}{2}$
y	5	3	1	–5	–6
(x, y)	(–1, 5)	(0, 1)	(1, 3)	(4, –5)	$(\frac{9}{2}, -6)$

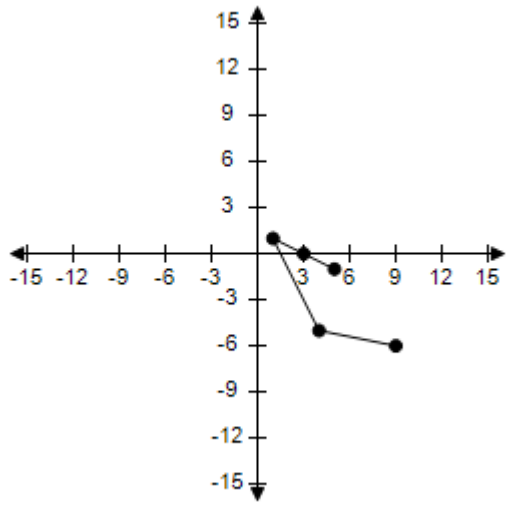
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c.

x	–1	0	1	4	$\frac{9}{2}$
y	5	3	1	–5	–6
(x, y)	(5, –1)	(3, 0)	(1, 1)	(4, –5)	$(\frac{9}{2}, -6)$

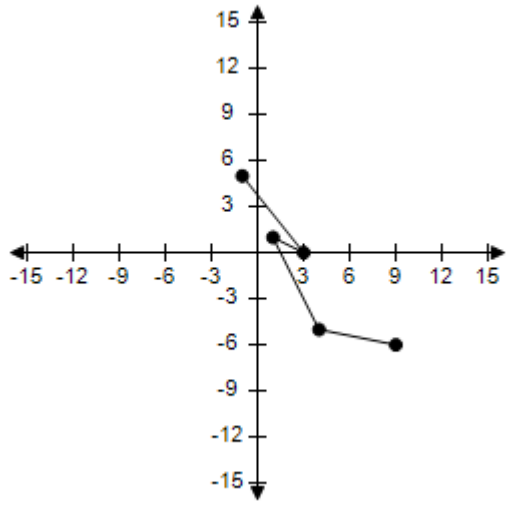


d.

x	–1	0	1	4	$\frac{9}{2}$
y	5	3	1	–5	–6
(x, y)	(–1, 5)	(3, 0)	(1, 1)	(4, –5)	$(\frac{9}{2}, -6)$

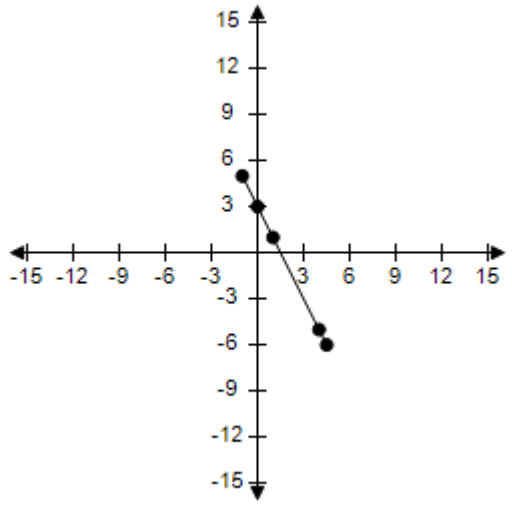
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e.

x	–1	0	1	4	$\frac{9}{2}$
y	5	3	1	–5	–6
(x, y)	(–1, 5)	(0, 3)	(1, 1)	(4, –5)	$(\frac{9}{2}, -6)$



ANSWER: e
POINTS: 1
REFERENCES: 1.1.15
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic

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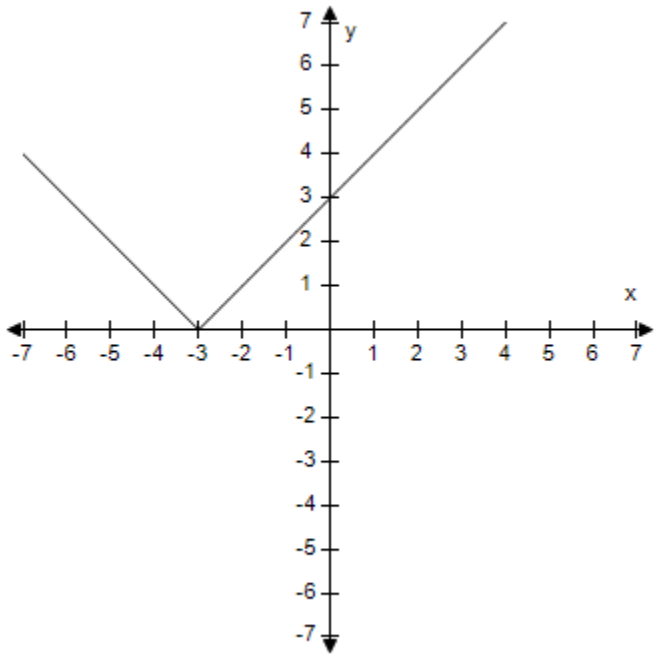
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Section 1.1 - Graphs of Equations

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10. Graphically estimate the x- and y-intercepts of the graph.

$y = |x + 3|$



a. x-intercept: $(-3, 0)$
   y-intercept: $(0, 3)$
b. x-intercept: $(0, -3)$
   y-intercept: $(3, 0)$
c. x-intercept: $(0, -3)$
   y-intercept: $(0, 3)$
d. x-intercept: $(3, 0)$
   y-intercept: $(3, 0)$
e. x-intercept: $(0, 3)$
   y-intercept: $(3, 0)$

ANSWER: a
POINTS: 1
REFERENCES: 1.1.21
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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Section 1.1 - Graphs of Equations

11. Determine which of the following points lies on the graph of the equation.

$x^2 + y^2 = 5$

a. (3, 1)
b. (2, 3)
c. (4, 1)
d. (2, 1)
e. (2, 2)

ANSWER: d
POINTS: 1
REFERENCES: 1.1.13
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 7/5/2021 11:57 PM

12. Which of the following graphs is symmetric about the *y*-axis?

a. $y = x^7 - x^6 + 18$
b. $y = x^7 - x^{12} + 18$
c. $y = x^9 - x^7 + 18$
d. $y = x^{12} - x^6 + 18$
e. $y = x^9 + x^7 + 18$

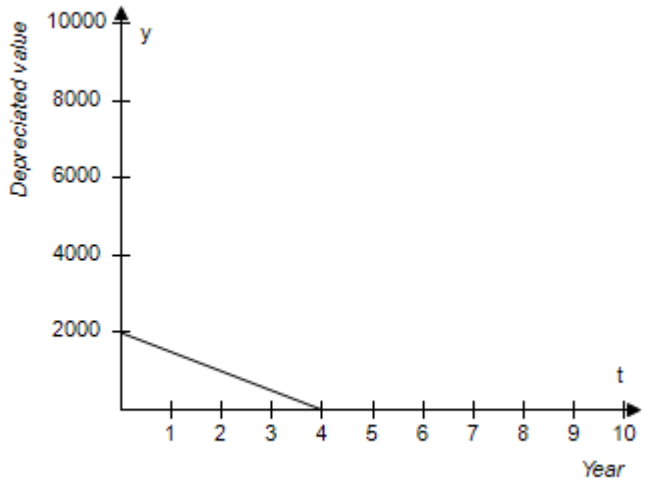
ANSWER: d
POINTS: 1
REFERENCES: 1.1.28
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 7/5/2021 11:57 PM

13. You purchase an all-terrain vehicle (ATV) for $2,000. The depreciated value y after t years is given by $y = 2{,}000 - 500t$, $0 \le t \le 6$. Sketch the graph of the equation.

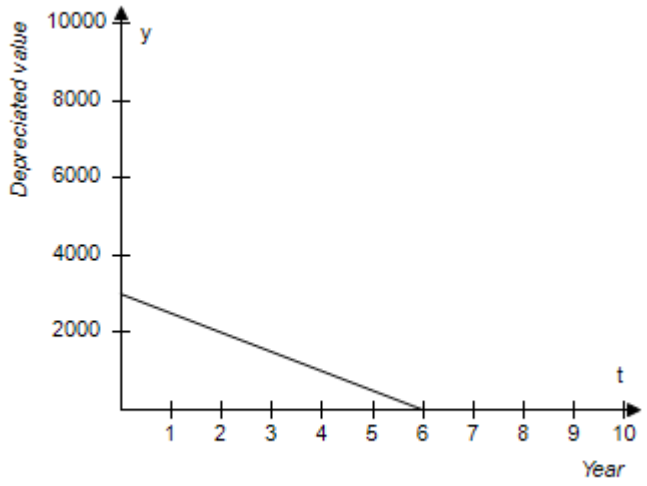
a.

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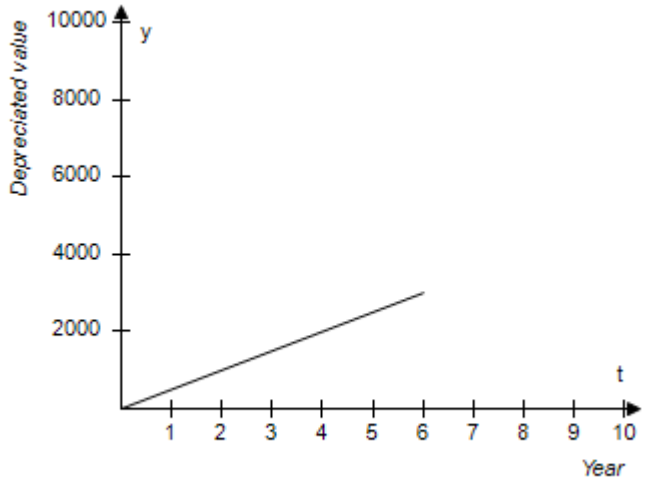
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b.



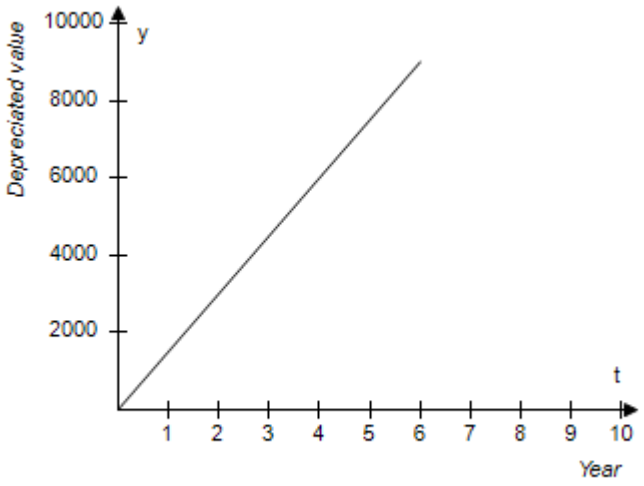
c.



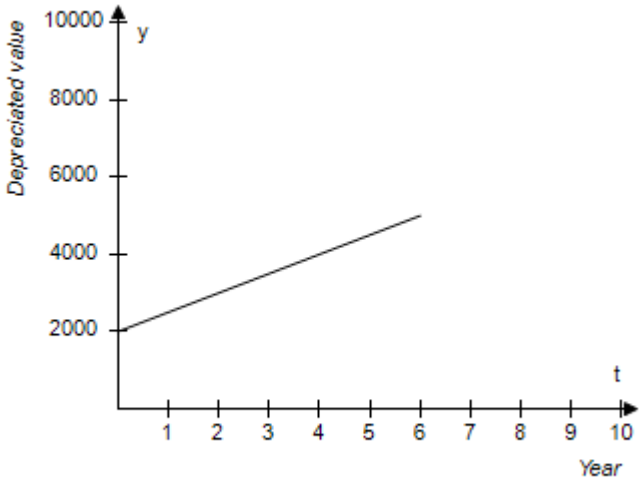
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d.



e.



ANSWER:	a
POINTS:	1
REFERENCES:	1.1.76
QUESTION TYPE:	Multi-Mode (Multiple choice)
HAS VARIABLES:	True
STUDENT ENTRY MODE:	Basic
DATE CREATED:	6/10/2014 4:15 PM
DATE MODIFIED:	9/19/2014 4:40 AM

14. The resistance y (in ohms) of 1,000 feet of solid copper wire at 68 degrees Fahrenheit can be approximated by the model

$$y = \frac{10{,}770}{x^2} - 0.37, \quad 5 \le x \le 100$$

where x is the diameter of the wire in mils (0.001 inch).

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Section 1.1 - Graphs of Equations

Complete the table.

x	15	45	55	70	75
y					

Round the answer to two decimal places.

a.

x	15	45	55	70	75
y	47.50	1.54	3.19	1.83	4.95

b.

x	15	45	55	70	75
y	47.50	4.95	3.19	1.54	1.83

c.

x	15	45	55	70	75
y	47.50	4.95	1.83	3.19	1.54

d.

x	15	45	55	70	75
y	47.50	3.19	4.95	1.83	1.54

e.

x	15	45	55	70	75
y	47.50	4.95	3.19	1.83	1.54

ANSWER: e
POINTS: 1
REFERENCES: 1.1.80
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/21/2014 2:50 AM

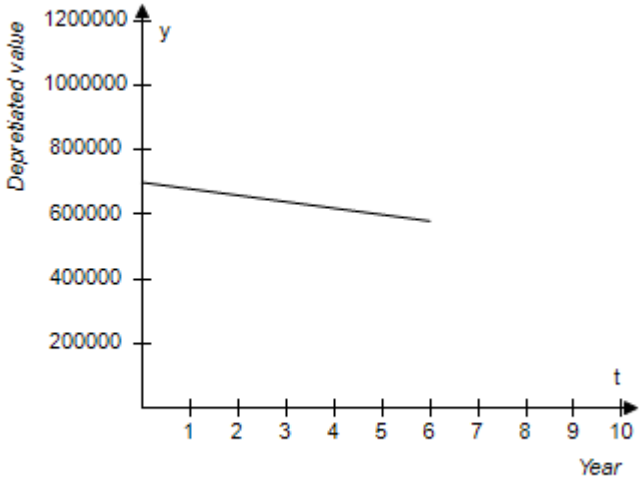
15. A hospital purchases a new magnetic resonance imaging (MRI) machine for $600,000. The depreciated value y (reduced value) after t years is given by $y = 600{,}000 - 20{,}000t$, $0 \le t \le 6$. Sketch the graph of the equation.

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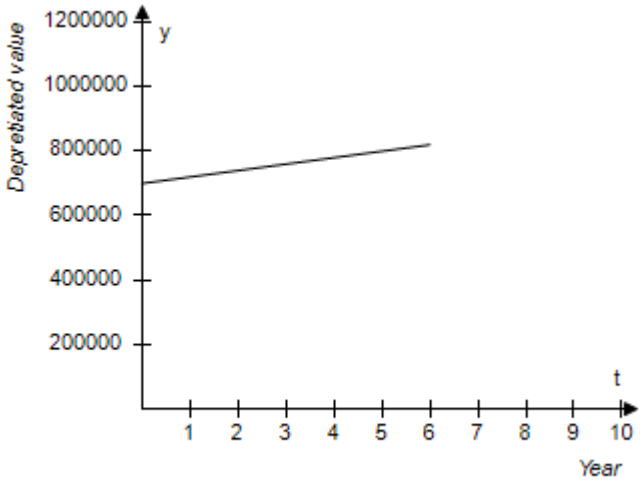
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Section 1.1 - Graphs of Equations

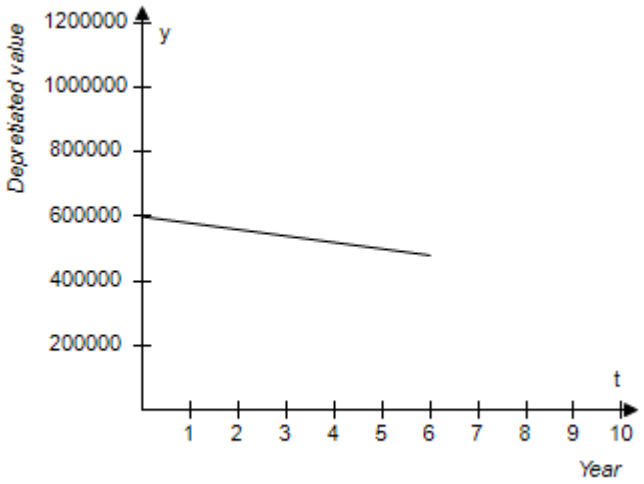
a.



b.



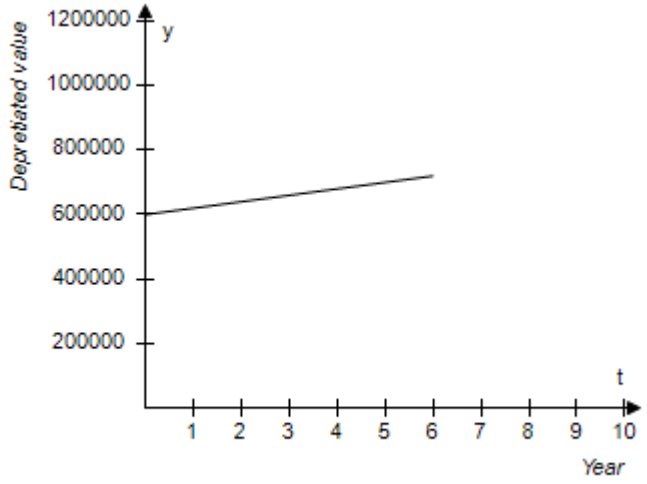
c.



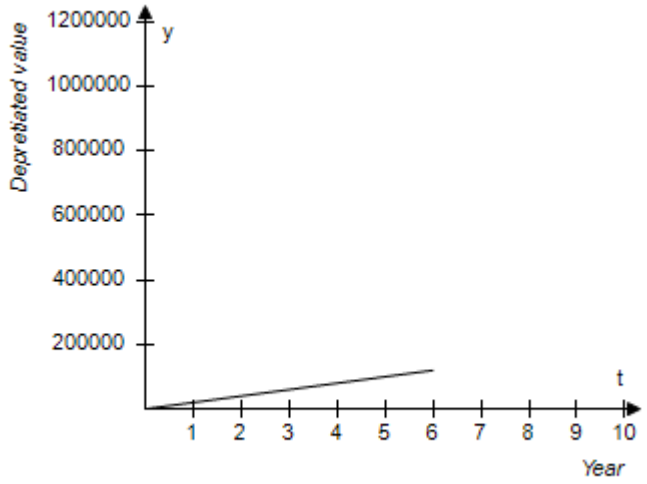
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d.



e.



ANSWER: c
POINTS: 1
REFERENCES: 1.1.75
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 7/6/2021 12:00 AM

16. Determine which of the following point lies on the graph of the equation.

$$y = \frac{1}{3}x^3 - 2x^2$$

a. (6, 0)
b. (4, 3)

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c. (7, 3)
d. (6, 4)
e. (6, 5)

ANSWER: a
POINTS: 1
REFERENCES: 1.1.14
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 7/6/2021 12:18 AM

17. Complete the table.

$$y = \frac{3}{4}x - 1$$

x	–12	–8	4	12	16
y					
(x,y)					

a.

x	–12	–8	4	12	16
y	–10	–7	2	8	11
(x,y)	(–10, –12)	(–7, –8)	(4, 2)	(12, 8)	(16, 11)

b.

x	–12	–8	4	12	16
y	–10	–7	2	8	11
(x,y)	(–12, –10)	(–8, –7)	(2, 4)	(12, 8)	(11, 16)

c.

x	–12	–8	4	12	16
y	–10	–7	2	8	11
(x,y)	(–12, –10)	(–7, –8)	(2, 4)	(12, 8)	(16, 11)

d.

x	–12	–8	4	12	16
y	–10	–7	2	8	11
(x,y)	(–12, –10)	(–8, –7)	(4, 2)	(12, 8)	(16, 11)

e.

x	–12	–8	4	12	16
y	–10	–7	2	8	11
(x,y)	(–12, –10)	(–8, 2)	(4, –7)	(12, 8)	(16, 11)

ANSWER: d
POINTS: 1
REFERENCES: 1.1.16
QUESTION TYPE: Multi-Mode (Multiple choice)

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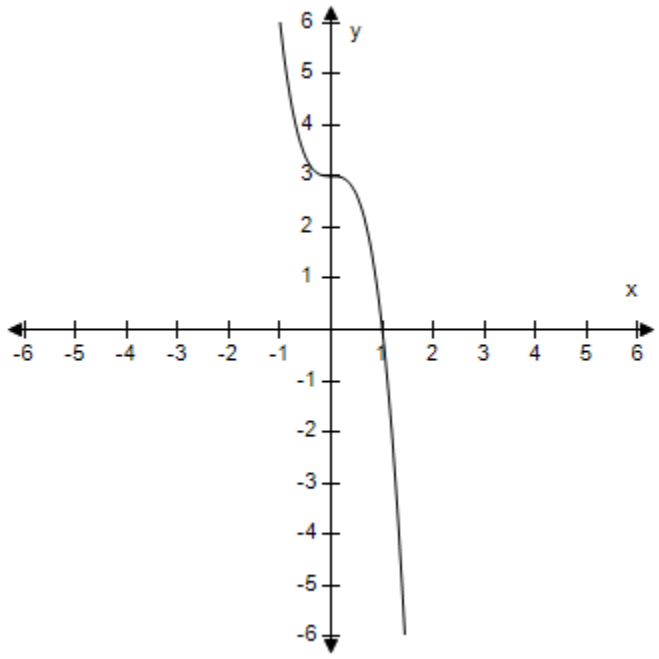
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Section 1.1 - Graphs of Equations

HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 9/19/2014 5:34 AM

18. Graphically estimate the x- and y-intercepts of the graph.

$y = 3 - 3x^3$



a. x-intercept: (0, 1)
y-intercept: (0, 3)
b. x-intercept: (1, 0)
y-intercept: (3, 0)
c. x-intercept: (0, 1)
y-intercept: (3, 0)
d. x-intercept: (1, 0)
y-intercept: (0, 3)
e. x-intercept: (1, 0)
y-intercept: (0, –3)

ANSWER: d
POINTS: 1
REFERENCES: 1.1.23
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic

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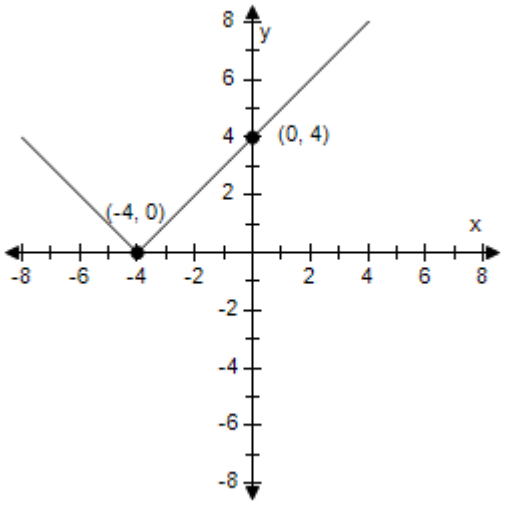
Section 1.1 - Graphs of Equations

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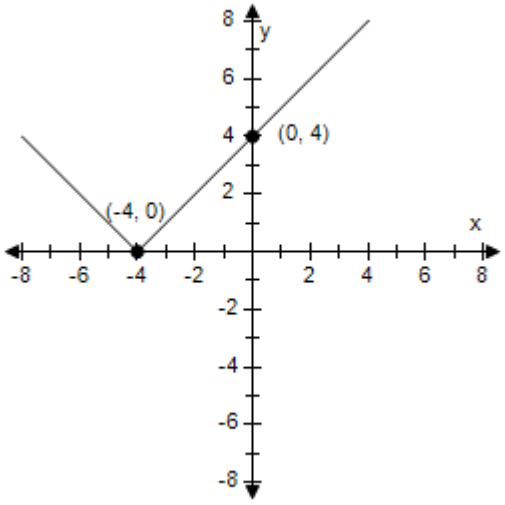
19. Identify any intercepts and test for symmetry. Then sketch the graph of the equation.

$y = |x - 4|$

a. x- intercept: (4, 0)
y- intercept: (0, 4)
No symmetry



b. x- intercept: (-4, 0)
y- intercept: (0, 4)
No symmetry

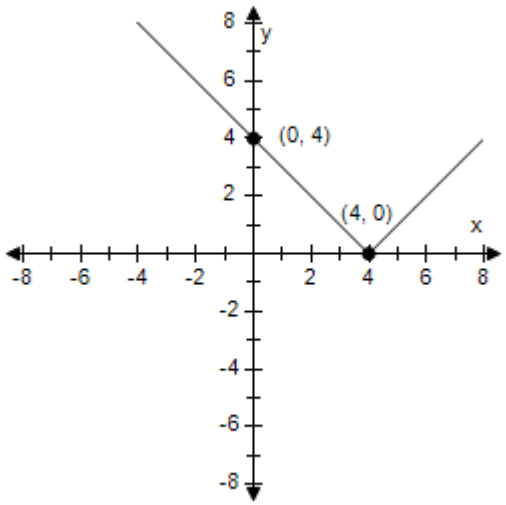


c. x- intercept: (4, 0)
y- intercept: (4, 0)

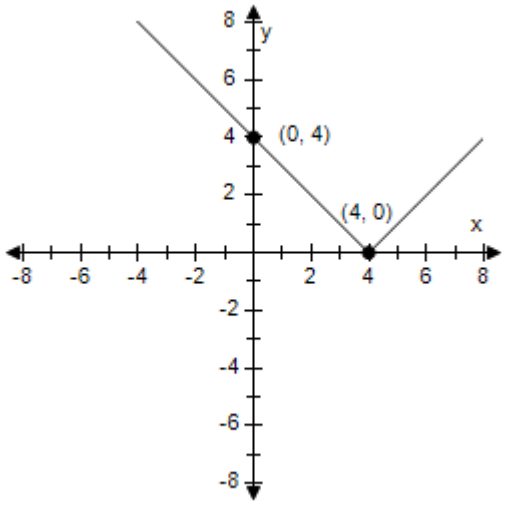
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No symmetry



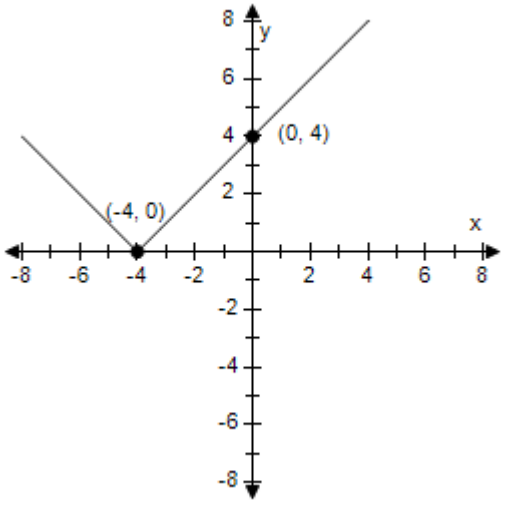
d. *x*- intercept: (4, 0)
y- intercept: (0, 4)
No symmetry



e. *x*- intercept: (4, 0)
y- intercept: (4, 0)
No symmetry

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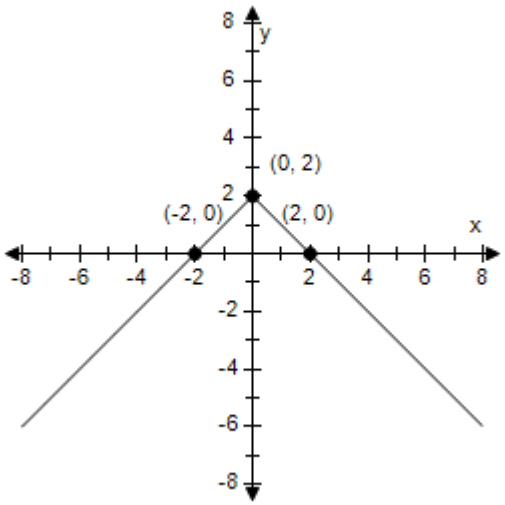


ANSWER: d
POINTS: 1
REFERENCES: 1.1.45
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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20. Identify any intercepts and test for symmetry. Then sketch the graph of the equation.

$y = 2 - |x|$

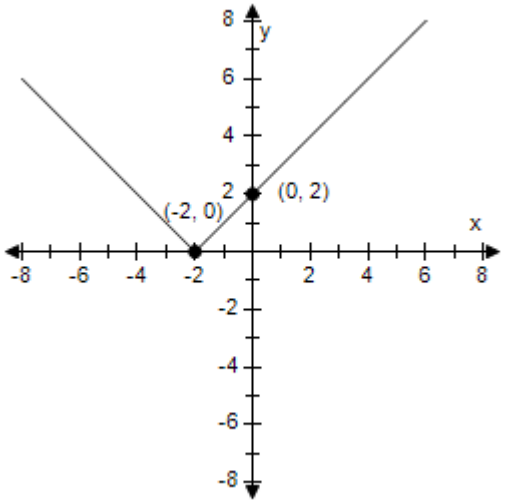
a. x- intercepts: $(\pm 2, 0)$
y- intercept: $(0, 2)$
y-axis symmetry



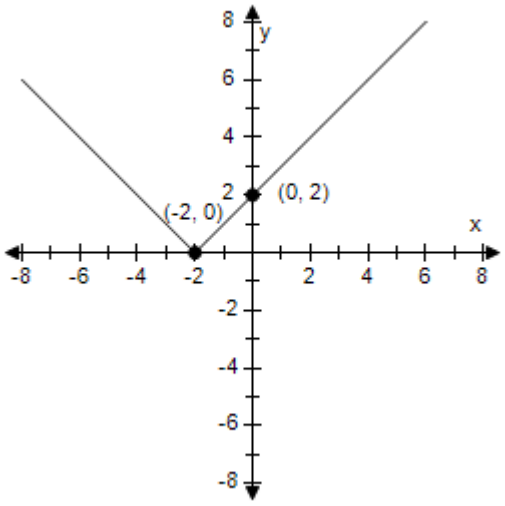
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b. *x*- intercept: (-2, 0)
y- intercept: (0, 2)
y-axis symmetry



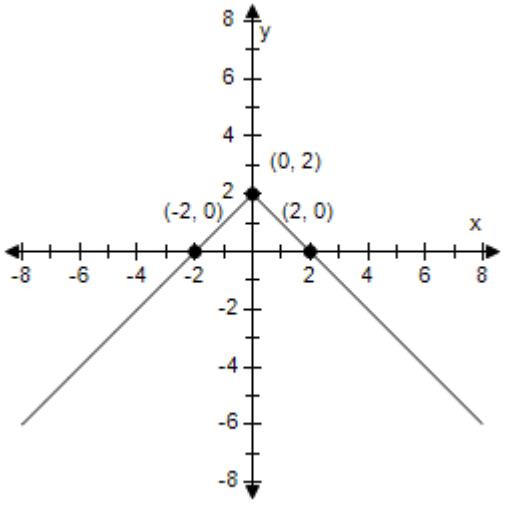
c. *x*- intercept: (2, 0)
y- intercepts: (0, ±2)
y-axis symmetry



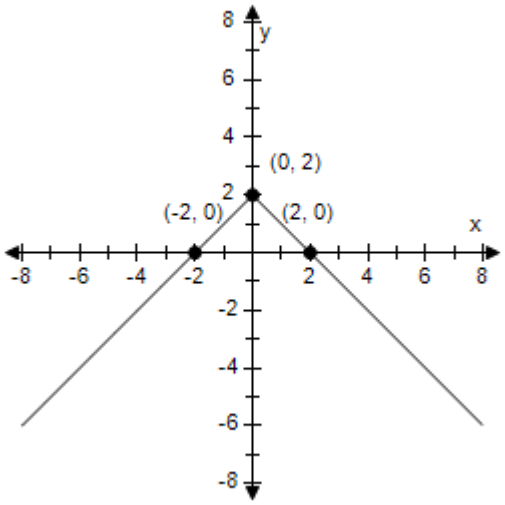
d. *x*- intercept: (2, 0)
y- intercept: (0, 2)
y-axis symmetry

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e. x- intercept: (-2, 0)
y- intercept: (0, 2)
y-axis symmetry



ANSWER: a
POINTS: 1
REFERENCES: 1.1.46
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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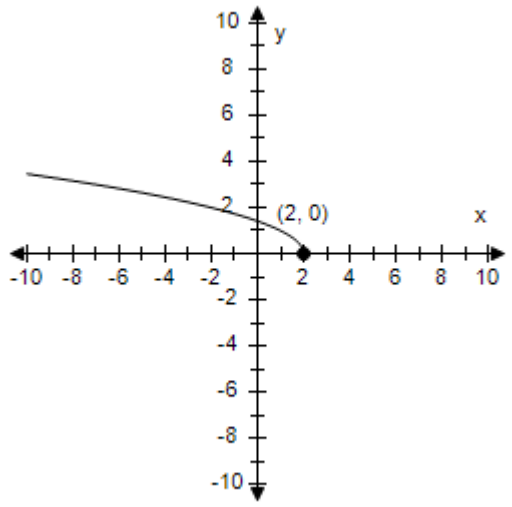
21. Identify any intercepts and test for symmetry. Then sketch the graph of the equation.

$y = \sqrt{x-2}$

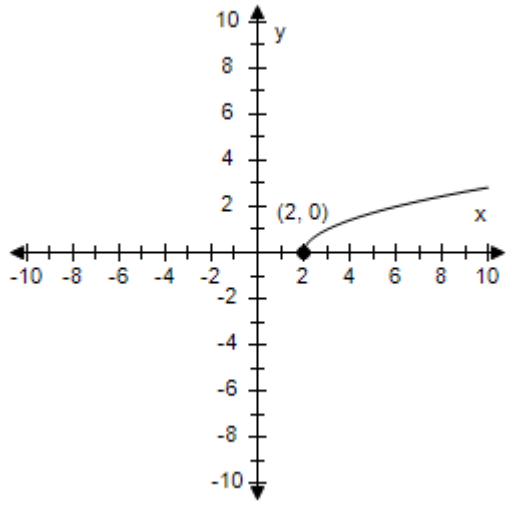
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a. *x*-intercept: (2, 0)
y-intercept: none
No symmetry



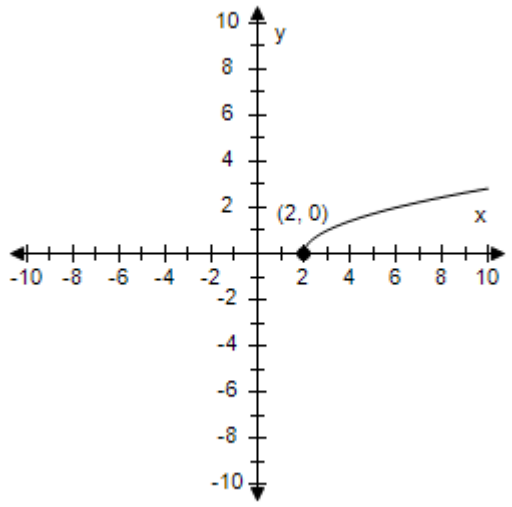
b. *x*-intercept: (2, 0)
y-intercept: none
No symmetry



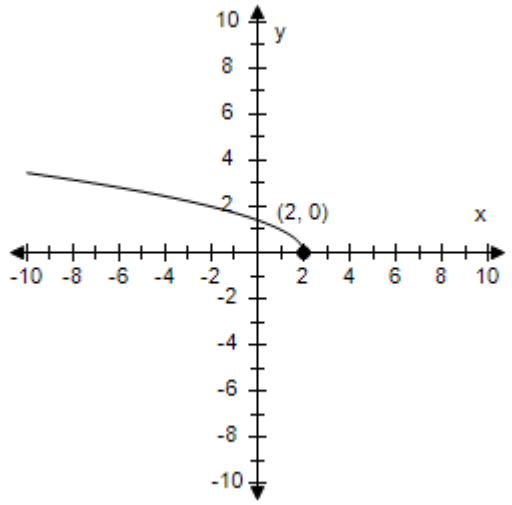
c. *x*-intercept: (2, 0)
y-intercept: $(0, \sqrt{2})$
No symmetry

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d. *x*-intercept: (-2, 0)
y-intercept: none
No symmetry

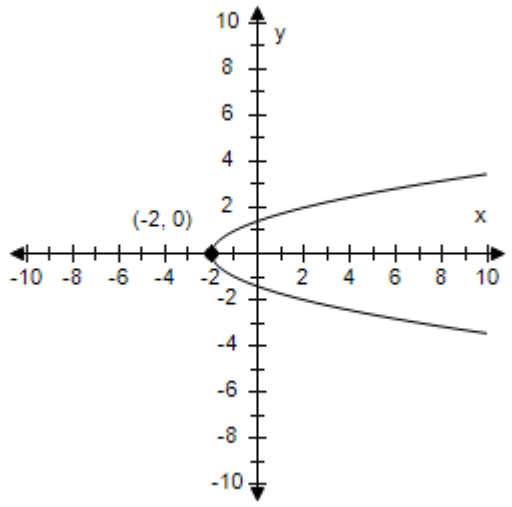


e. *x*-intercept: (-2, 0)
y-intercept: none
No symmetry

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Section 1.1 - Graphs of Equations

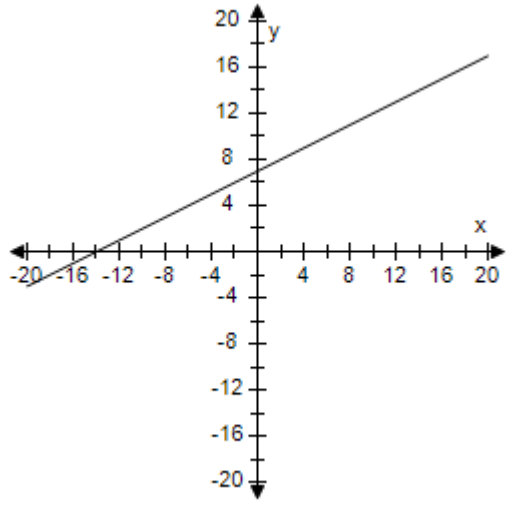


ANSWER: b
POINTS: 1
REFERENCES: 1.1.43
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
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22. Use a graphing utility to graph the equation. Use a standard setting. Approximate any intercepts.

$$y = 7 - \frac{1}{2}x$$

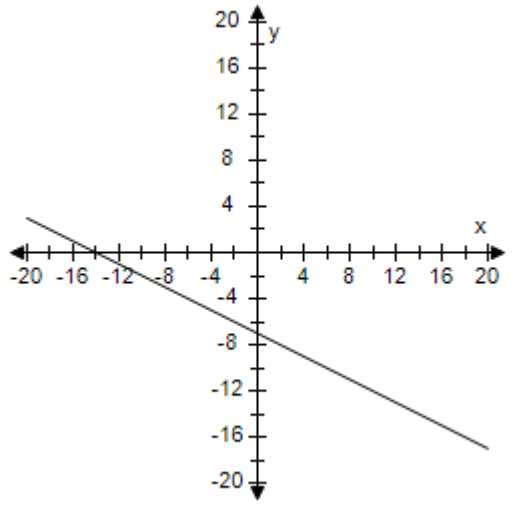
a. Intercepts: (0, 7), (-14, 0)



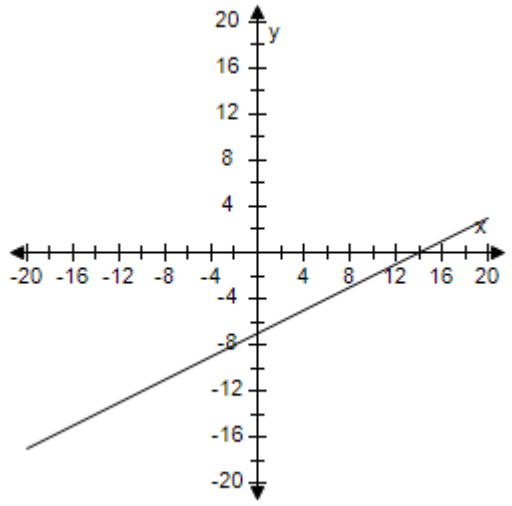
b. Intercepts: (-14, 0), (0, -7)

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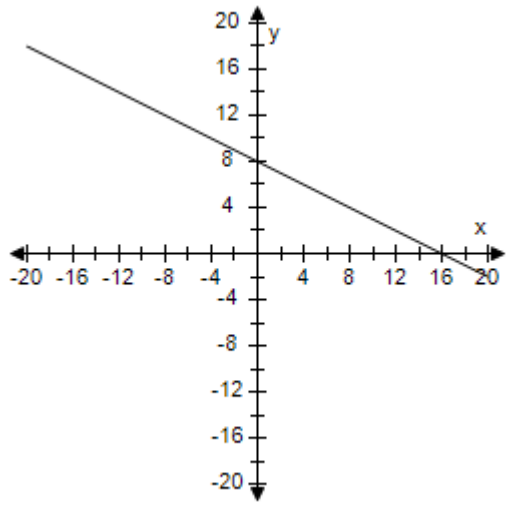
c. Intercepts: (14, 0), (0, -7)



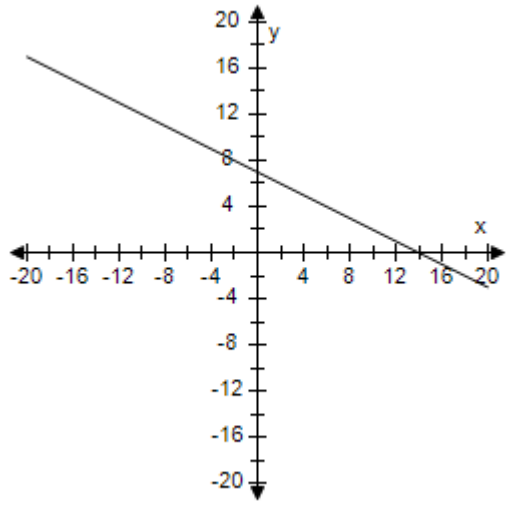
d. Intercepts: (0, 8), (15, 0)

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e. Intercepts: (14, 0), (0, 7)



ANSWER: e
POINTS: 1
REFERENCES: 1.1.49
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/18/2014 2:34 AM

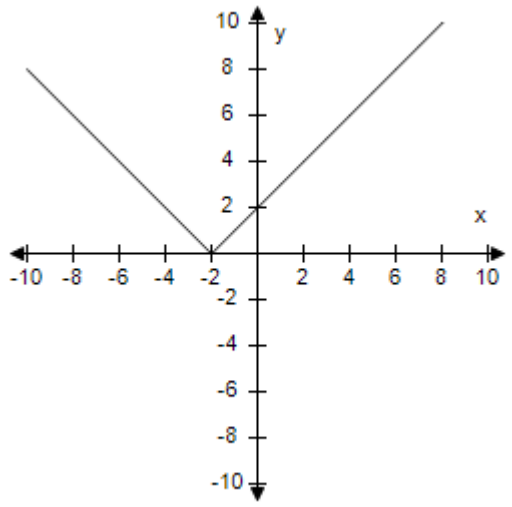
23. Use a graphing utility to graph the equation. Use a standard setting. Approximate any intercepts.

$y = |x + 2|$

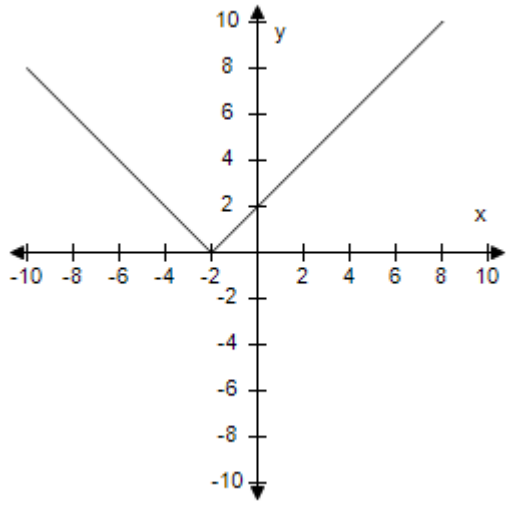
a. Intercepts: (0, -2), (0, 2)

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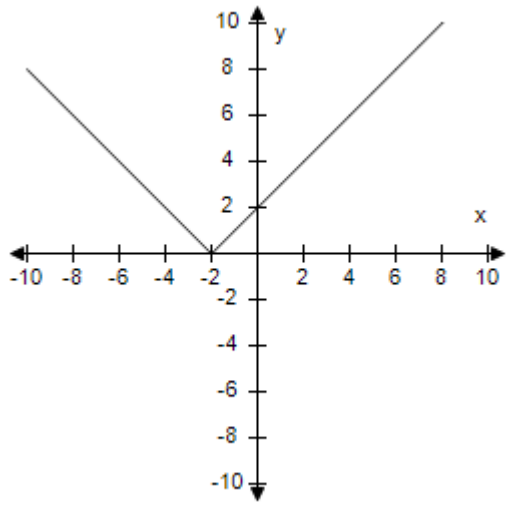
b. Intercepts: (-2, 0), (0, -2)



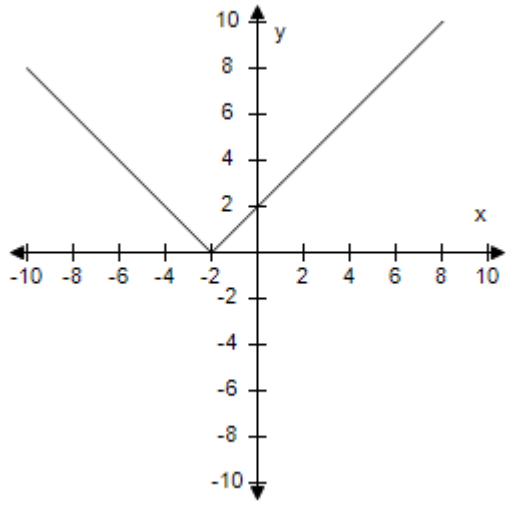
c. Intercepts: (2, 0), (0, 2)

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d. Intercepts: (-2, 0), (0, 2)

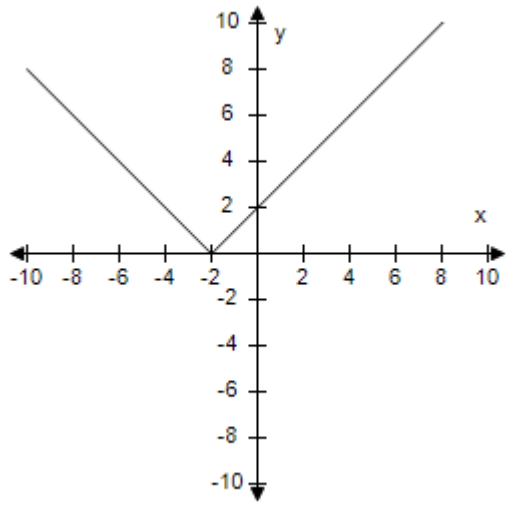


e. Intercepts: (-2, 0), (2, 0)

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Section 1.1 - Graphs of Equations

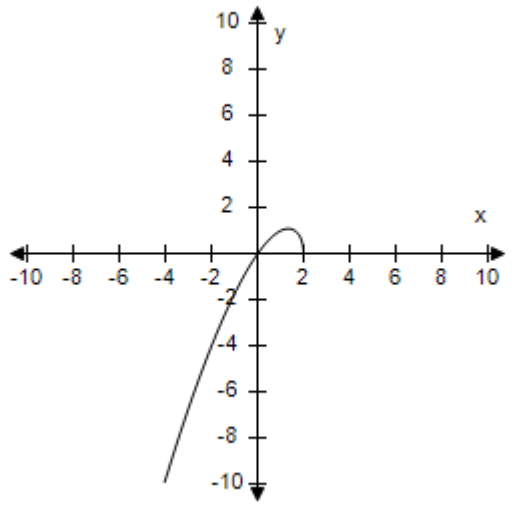


ANSWER: d
POINTS: 1
REFERENCES: 1.1.59
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/18/2014 2:29 AM

24. Use a graphing utility to graph the equation. Use a standard setting. Approximate any intercepts.

$y = x\sqrt{x+2}$

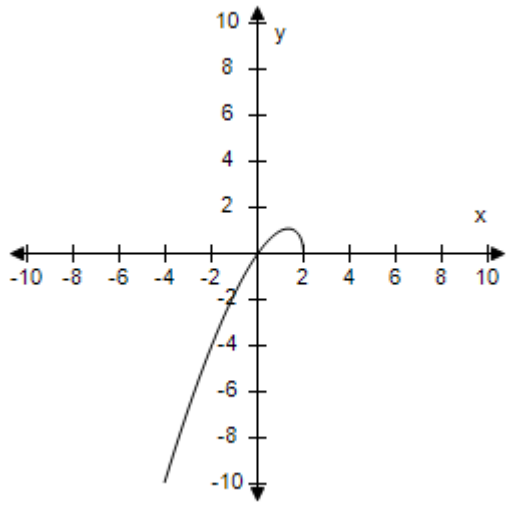
a. Intercepts: (0, 0), (-2, 0)



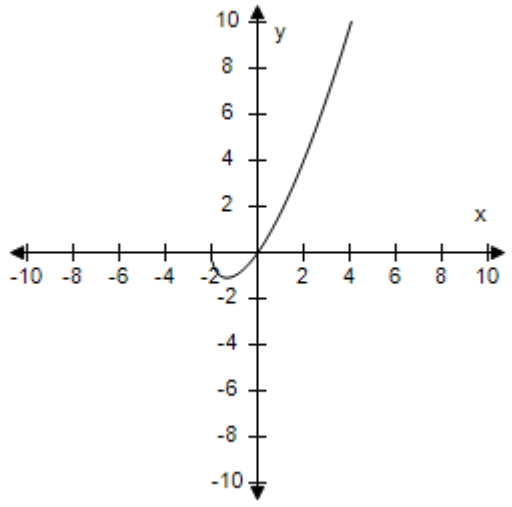
b. Intercepts: (0, 0), (2, 0)

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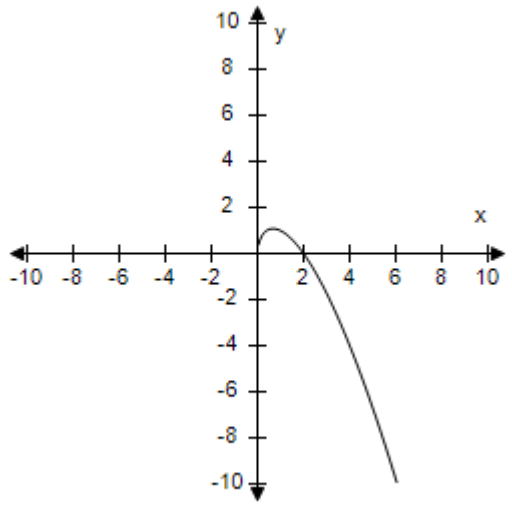
c. Intercepts: (0, 0), (-2, 0)



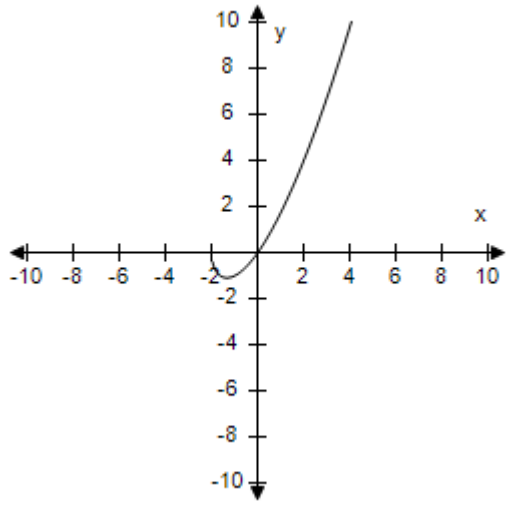
d. Intercepts: (0, 0), (-2, 0)

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e. Intercepts: (0, 0), (6, 0)



ANSWER: c
POINTS: 1
REFERENCES: 1.1.57
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 5/8/2015 12:08 PM

25. Determine which of the following points lies on the graph of the equation.

$y = 3 - |x - 1|$

a. (4, 2)
b. (6, 0)

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c. (5, 0)
d. (4, 0)
e. (4, 1)

ANSWER: d
POINTS: 1
REFERENCES: 1.1.10
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 7/6/2021 12:30 AM

26. Complete the table. Use the resulting solution points to sketch the graph of the equation.

$y = 7 - 4x^2$

x	–2	–1	0	1	2
y					
(x,y)					

x	7	4	–1	–2	–5
y					
(x,y)					

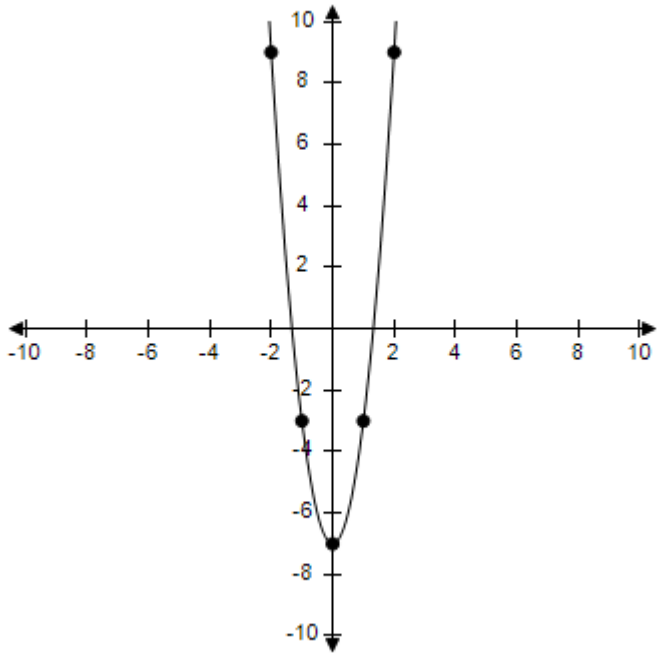
x	7	4	–1	–2	–5
y					
(x,y)					

a.

x	–2	–1	0	1	2
y	9	–3	–7	–3	9
(x,y)	(–2, 9)	(–1, –3)	(0, –7)	(1, –3)	(2, 9)

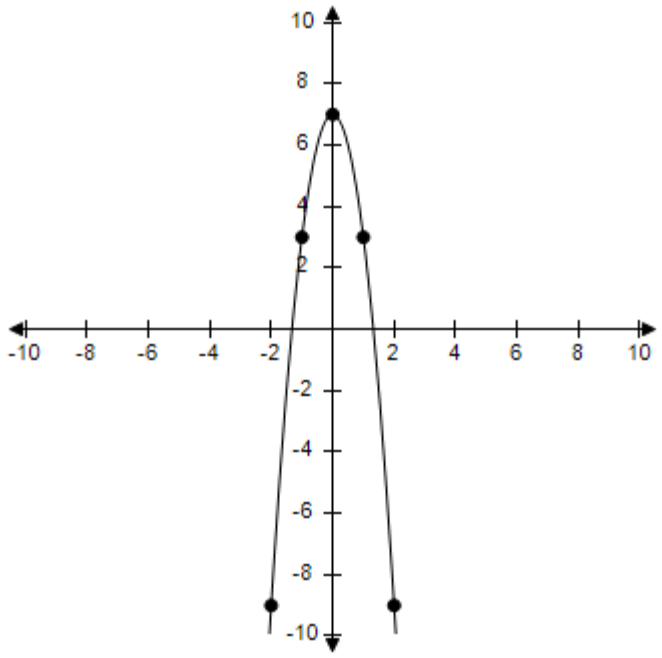
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b.

x	–2	–1	0	1	2
y	–9	3	7	3	–9
(x,y)	(–2, –9)	(–1, 3)	(0, 7)	(1, 3)	(2, –9)



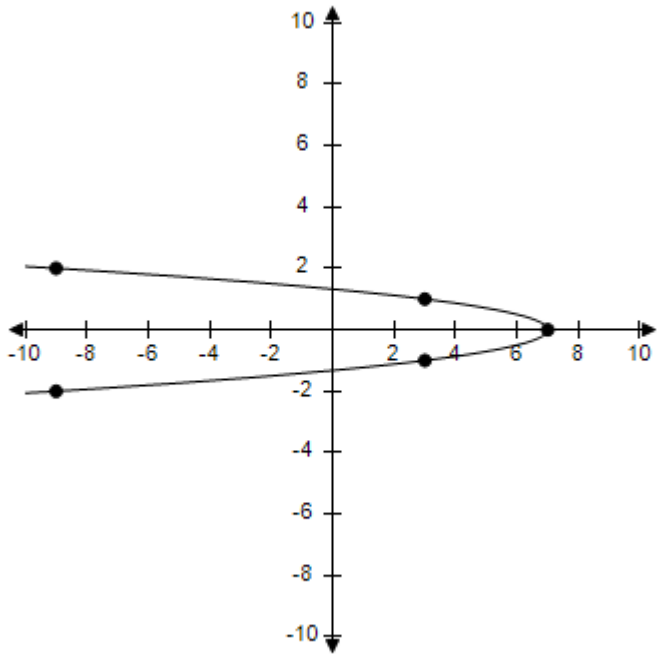
c.

x	–2	–1	0	1	2

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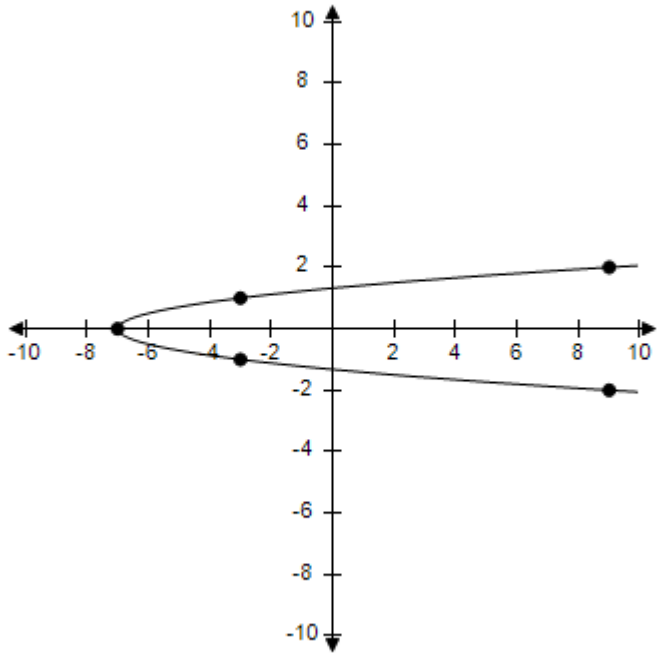
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y	–9	3	7	3	–9
(x,y)	(–2, –9)	(–1, 3)	(0, 7)	(1, 3)	(2, –9)



d.

x	–2	–1	0	1	2
y	9	–3	–7	–3	9
(x,y)	(–2, 9)	(–1, –3)	(0, –7)	(1, –3)	(2, 9)

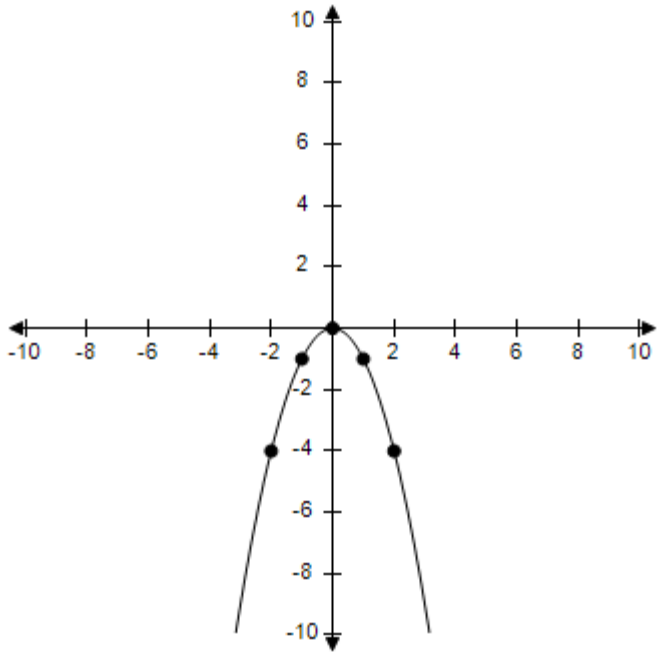


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e.

x	–2	–1	0	1	2
y	–4	–1	0	–1	–4
(x,y)	(,)	(,)	(,)	(,)	(,)



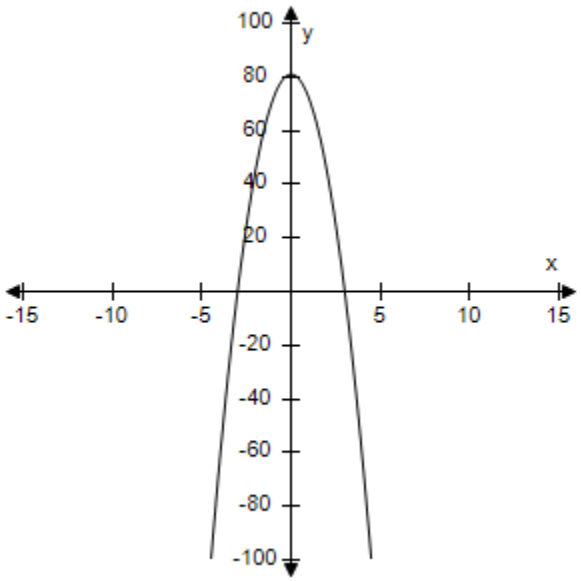
ANSWER: b
POINTS: 1
REFERENCES: 1.1.18
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
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27. Graphically estimate the x- and y-intercepts of the graph.

$y = 81 - 9x^2$

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a. x-intercepts: $(\pm 3, 0)$
   y-intercept: $(0, 81)$
b. x-intercept: $(3, 0)$
   y-intercept: $(0, 81)$
c. x-intercept: $(-3, 0)$
   y-intercept: $(0, 81)$
d. x-intercepts: $(\pm 3, 0)$
   y-intercept: $(0, 9)$
e. x-intercept: $(0, 3)$
   y-intercept: $(0, 81)$

ANSWER: a
POINTS: 1
REFERENCES: 1.1.20
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 7/6/2021 10:37 AM

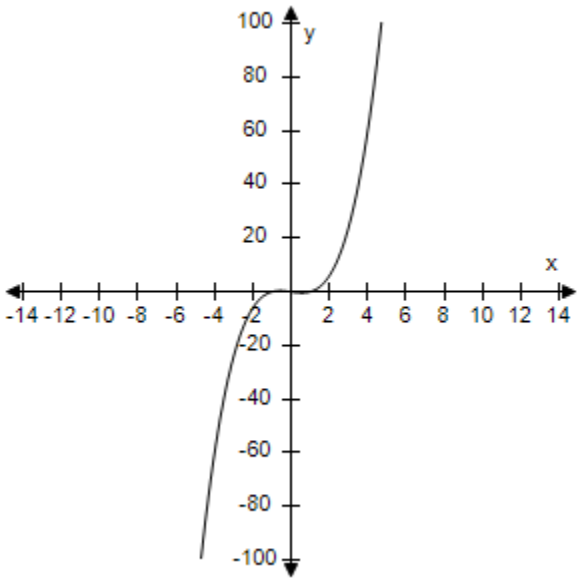
28. Graphically estimate the x- and y-intercepts of the graph.

$y = x^3 - x$

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Section 1.1 - Graphs of Equations



a. x-intercepts: $(\pm 1, 0)$, $(0, 0)$
   y-intercept: $(0, 0)$
b. x-intercepts: $(1, 0)$, $(0, 0)$
   y-intercept: $(0, 0)$
c. x-intercepts: $(-1, 0)$, $(0, 0)$
   y-intercept: $(0, 0)$
d. x-intercepts: $(0, \pm 1)$, $(0, 0)$
   y-intercept: $(0, 0)$
e. x-intercepts: $(0, 1)$, $(0, 0)$
   y-intercept: $(0, 0)$

ANSWER:	a
POINTS:	1
REFERENCES:	1.1.24
QUESTION TYPE:	Multi-Mode (Multiple choice)
HAS VARIABLES:	True
STUDENT ENTRY MODE:	Basic
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DATE MODIFIED:	7/6/2021 10:38 AM

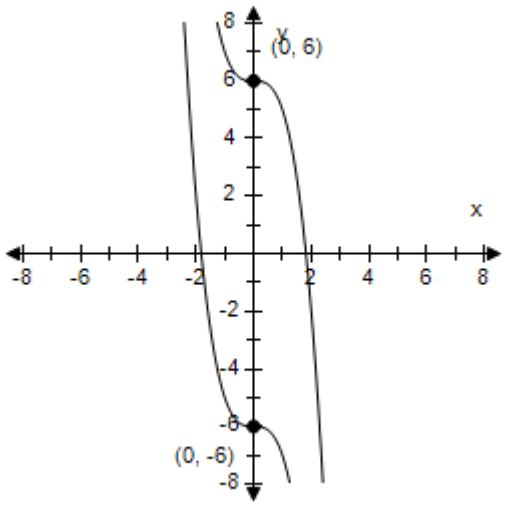
29. Identify any intercepts and test for symmetry. Then sketch the graph of the equation.

$y = x^3 - 6$

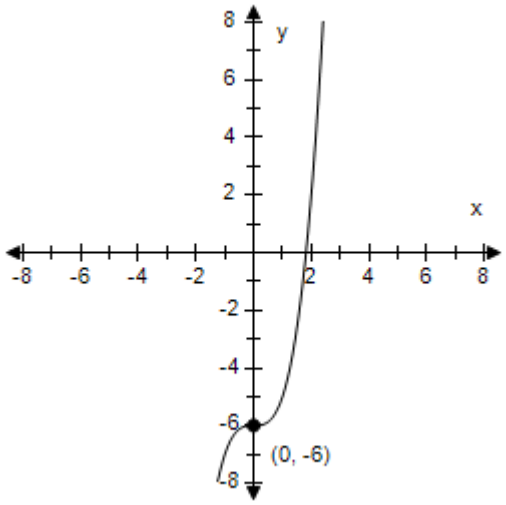
a. x- intercept: $(\sqrt[3]{6}, 0)$
   y- intercept: $(0, \pm 6)$
   No symmetry

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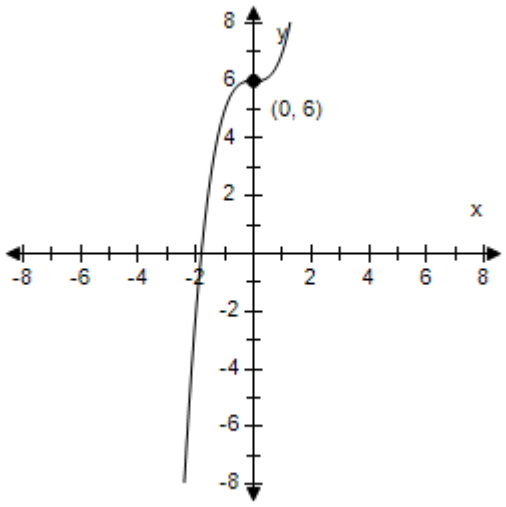
b. x- intercept: $(\sqrt[3]{6}, 0)$
y- intercept: (0, -6)
No symmetry



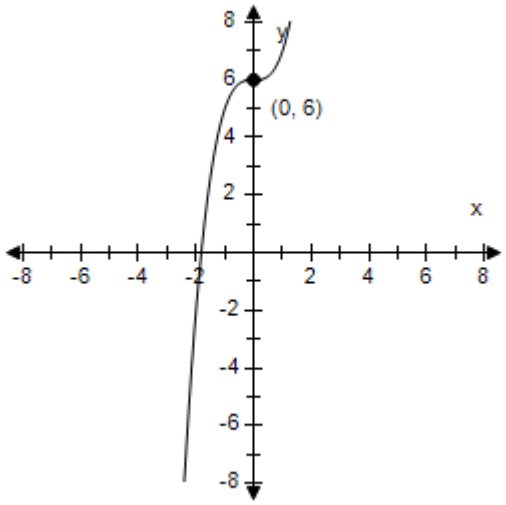
c. x- intercept: $(\sqrt[3]{6}, 0)$
y- intercept: (0, 6)
No symmetry

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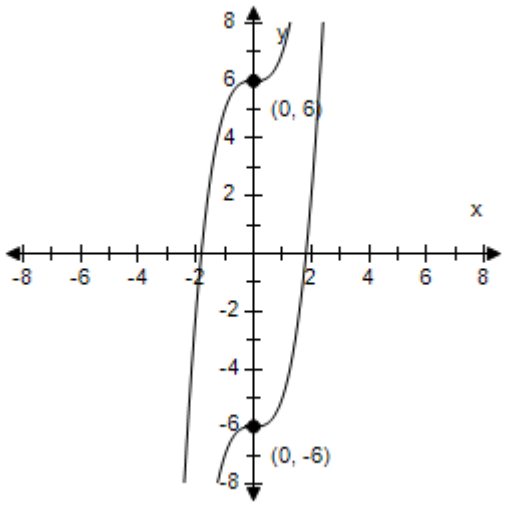
d. x- intercept: $(\sqrt[3]{-6}, 0)$
y- intercept: $(0, 6)$
No symmetry



e. x- intercept: $(\sqrt[3]{-6}, 0)$
y- intercept: $(0, \pm 6)$
No symmetry

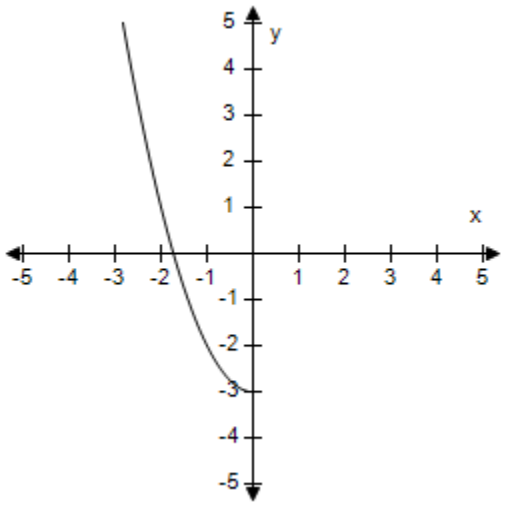
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ANSWER: b
POINTS: 1
REFERENCES: 1.1.42
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
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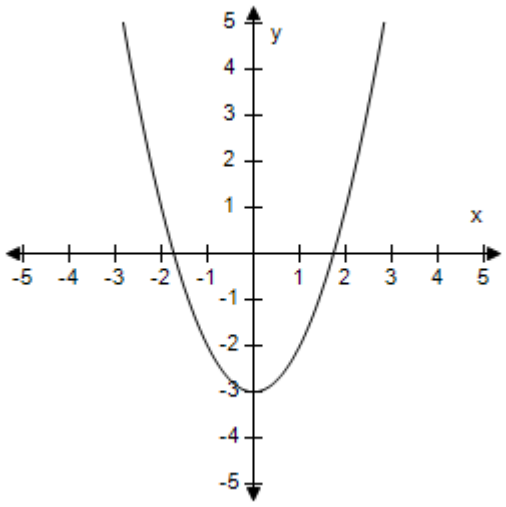
30. Assume that the graph has *y*-symmetry. Select the complete graph of the equation.



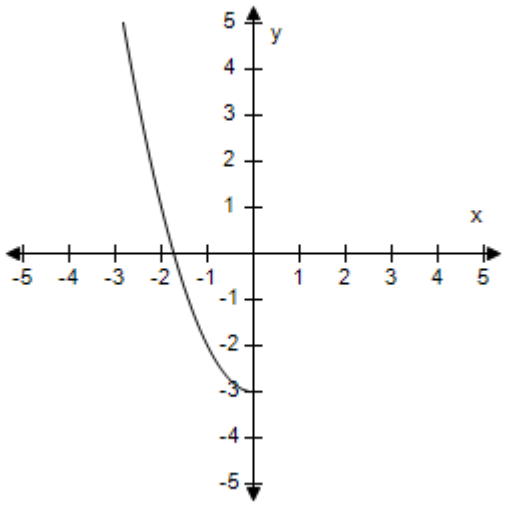
a.

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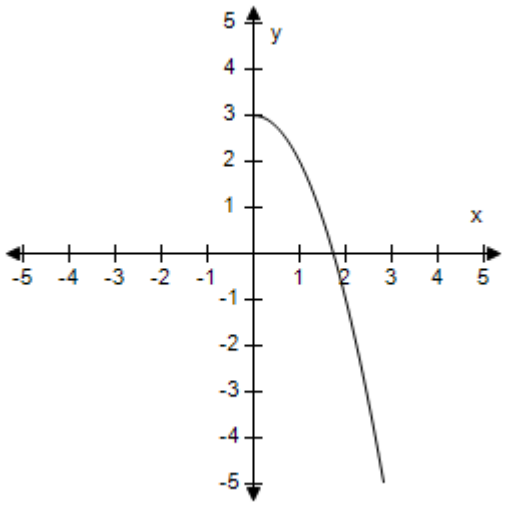
b.



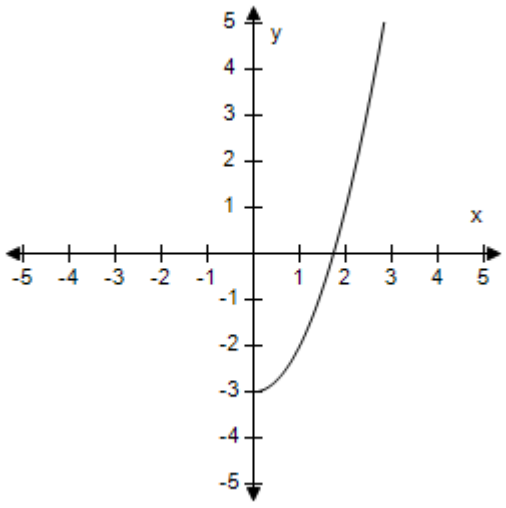
c.

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d.

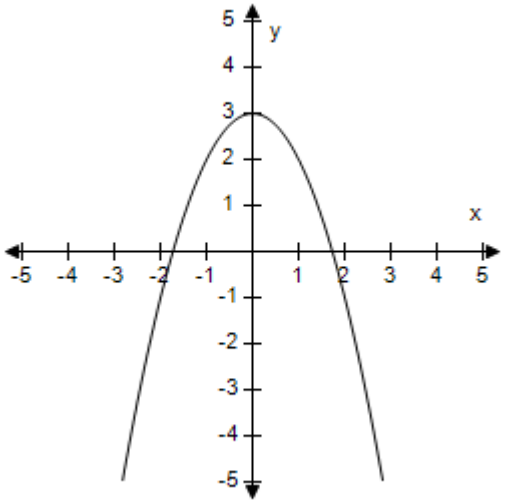


e.

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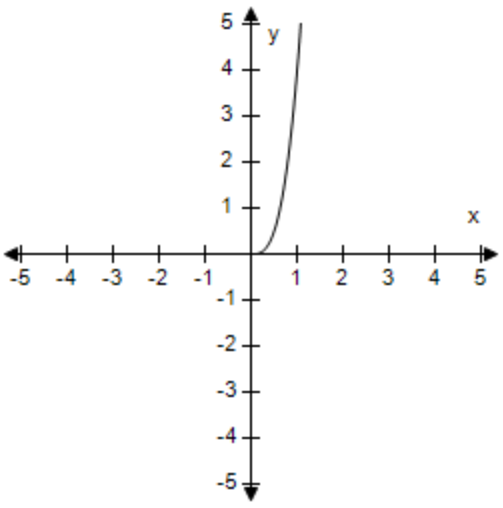
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Section 1.1 - Graphs of Equations



ANSWER: a
POINTS: 1
REFERENCES: 1.1.33
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/19/2014 1:41 AM

31. Assume that the graph has Origin symmetry. Select the complete graph of the equation.

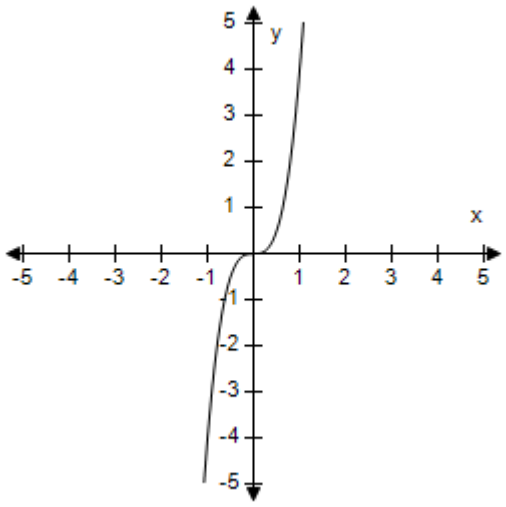


a.

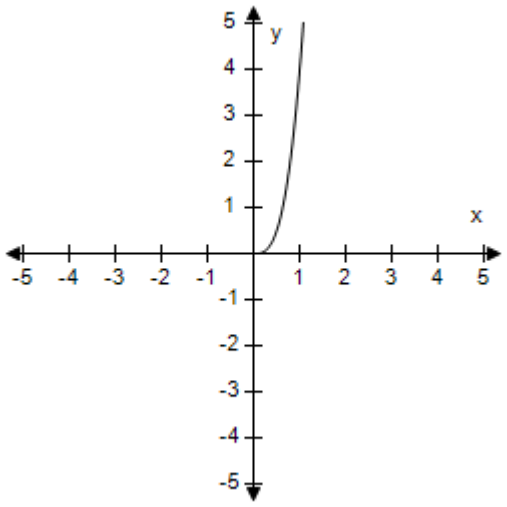
b.

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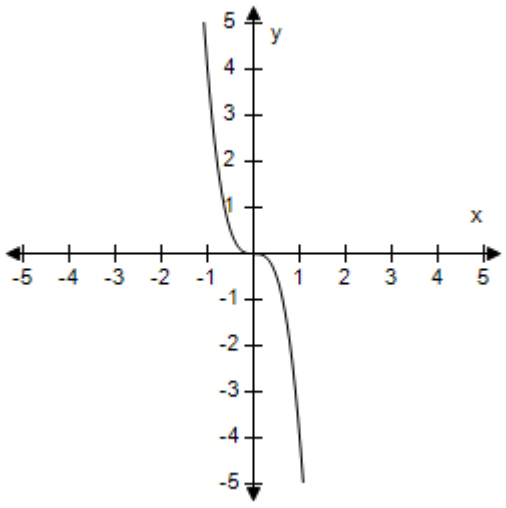
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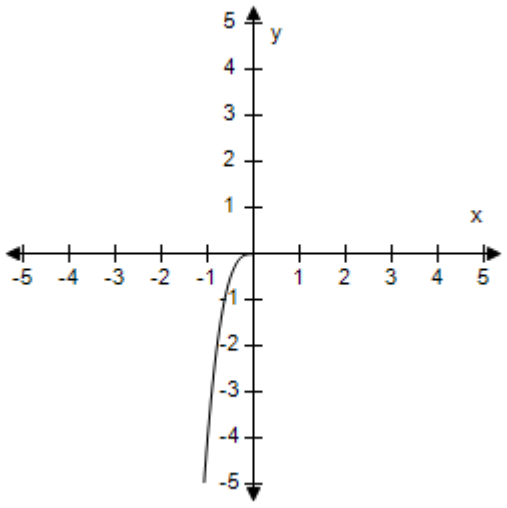
c.



d.



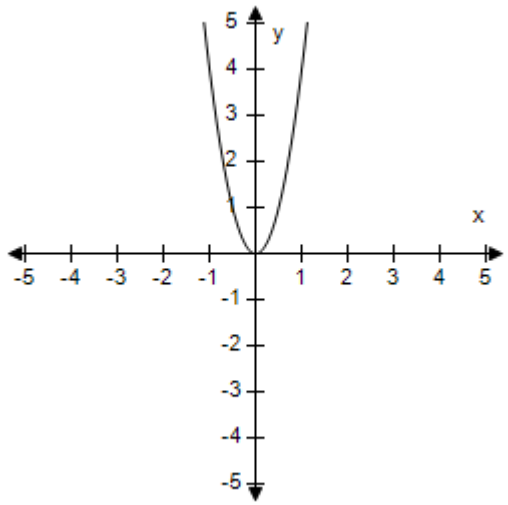
e.



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Section 1.1 - Graphs of Equations



ANSWER: a
POINTS: 1
REFERENCES: 1.1.35
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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DATE MODIFIED: 11/19/2014 2:08 AM

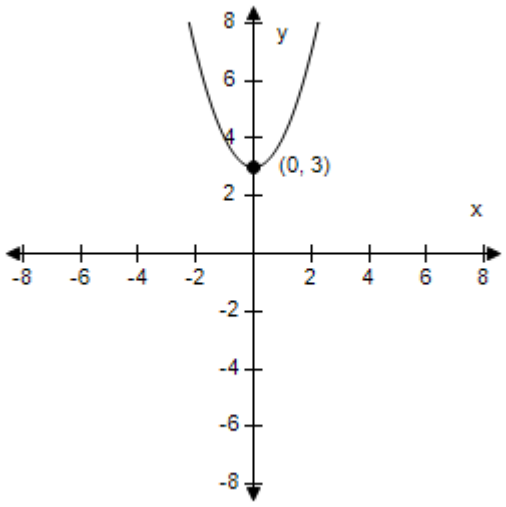
32. Identify any intercepts and test for symmetry. Then sketch the graph of the equation.

$y = x^2 + 3$

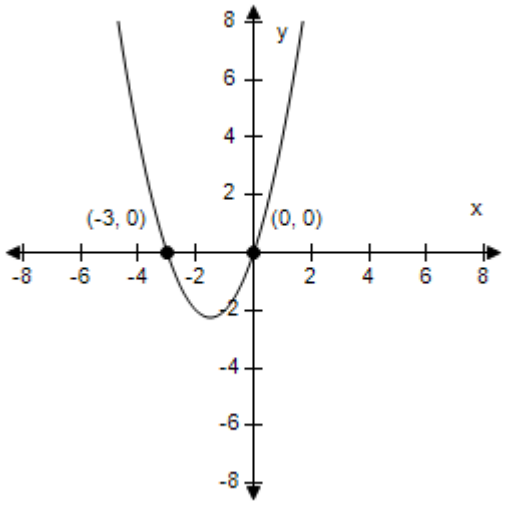
a. x-intercept : none
y-intercept : (0, 3)
The graph has y-symmetry.

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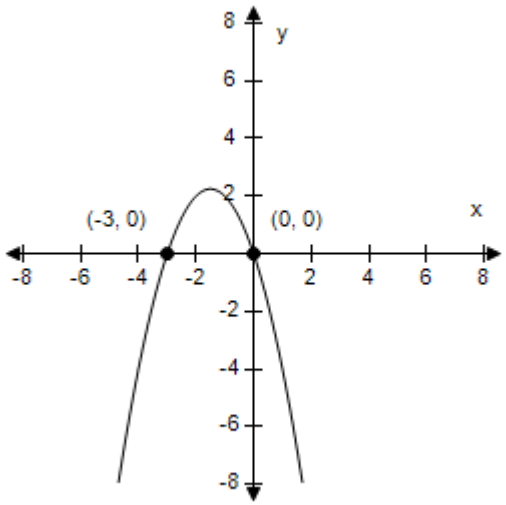
b. *x*-intercepts : (0, 0), (-3, 0)
y-intercept : (0, 0)
No symmetry



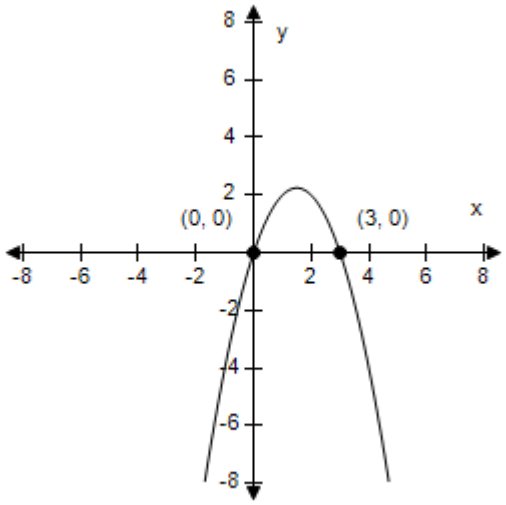
c. *x*-intercepts : (0, 0), (-3, 0)
y-intercept : (0, 0)
No symmetry

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d. x-intercepts : (0, 0), (3, 0)
y-intercept : (0, 0)
No symmetry

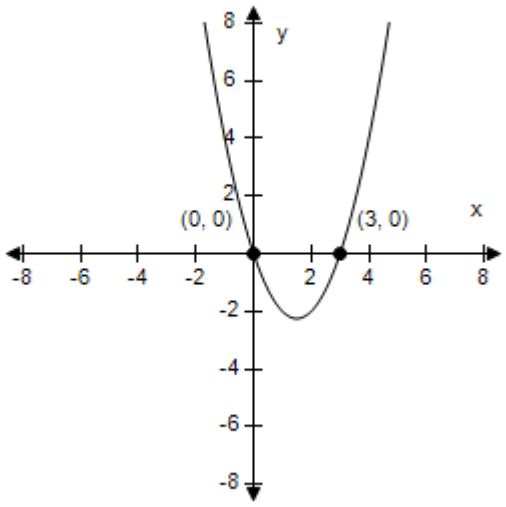


e. x-intercepts : (0, 0), (3, 0)
y-intercept : (0, 0)
No symmetry

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Section 1.1 - Graphs of Equations

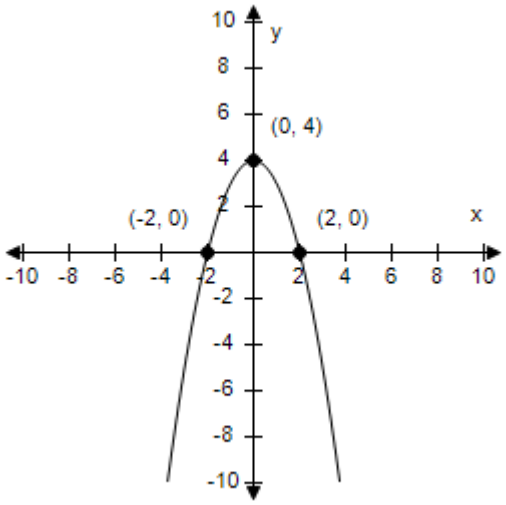


ANSWER: a
POINTS: 1
REFERENCES: 1.1.41
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 7/6/2021 10:39 AM

33. Use a graphing utility to graph the equation. Use a standard setting. Approximate any intercepts.

$y = x^2 - 4$

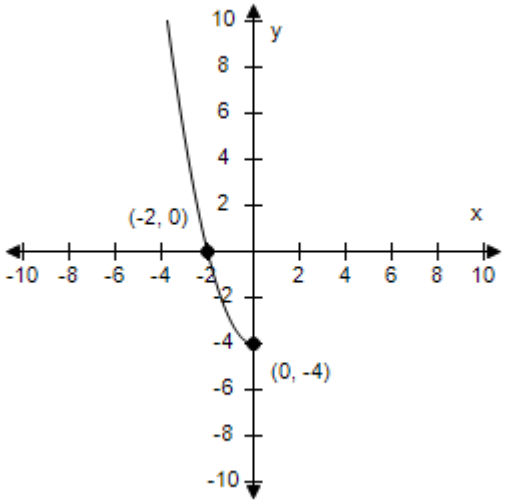
a.



Intercepts: (-2, 0), (2, 0), (0, 4)

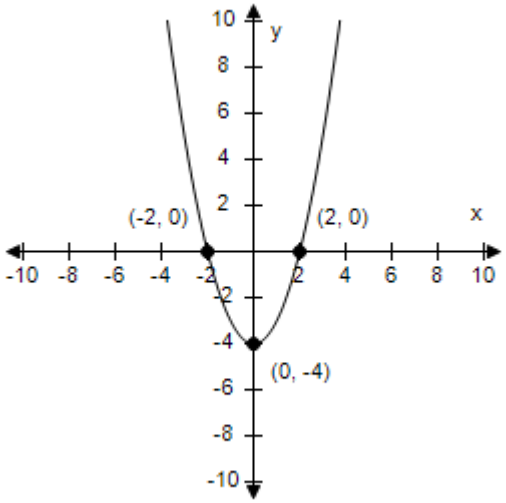
b.

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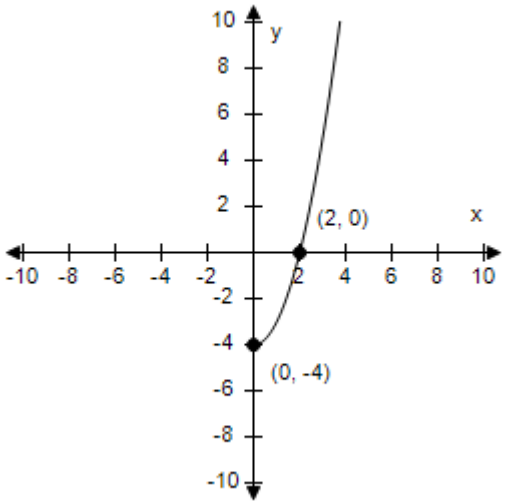
Intercepts: (-2, 0), (0, -4)

c.



Intercepts: (-2, 0), (2, 0), (0, -4)

d.

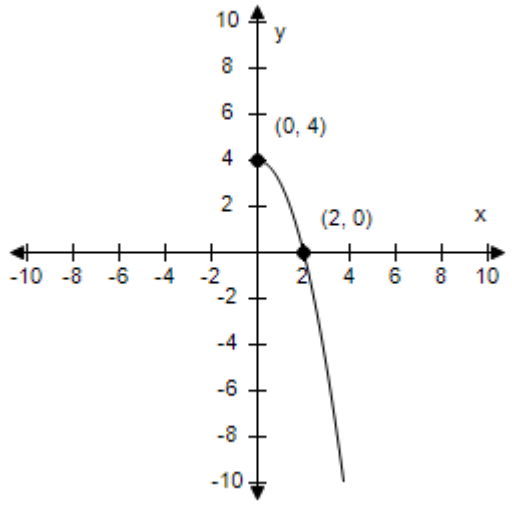


Intercepts: (2, 0), (0, -4)

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e.



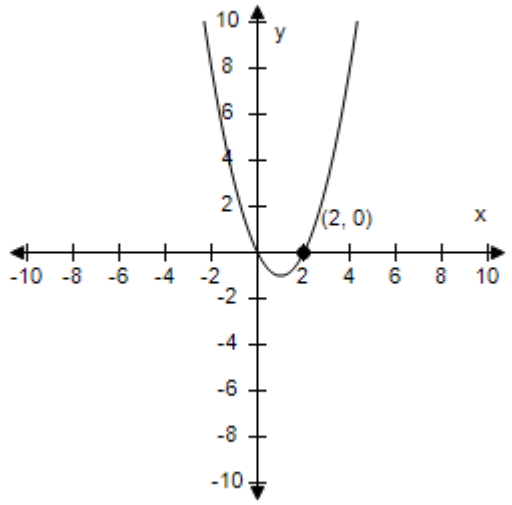
Intercepts: (2, 0), (0, 4)

ANSWER: c
POINTS: 1
REFERENCES: 1.1.51
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/19/2014 2:47 AM

34. Use a graphing utility to graph the equation. Use a standard setting. Approximate any intercepts.

$y = x^2 - 2x$

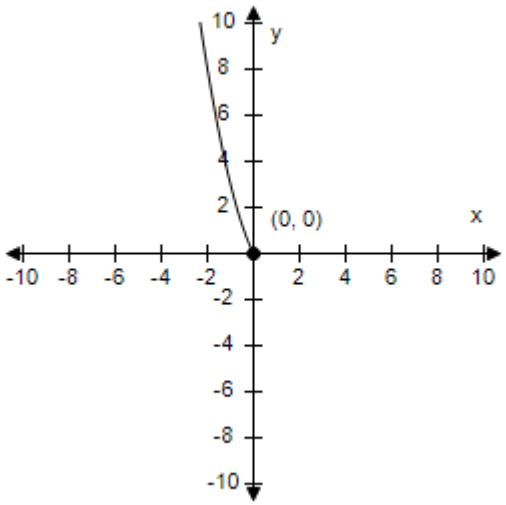
a.



Intercepts: (0, 0), (-2, 0)

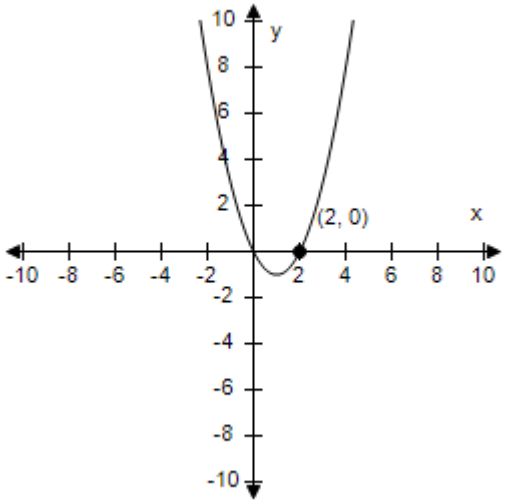
b.

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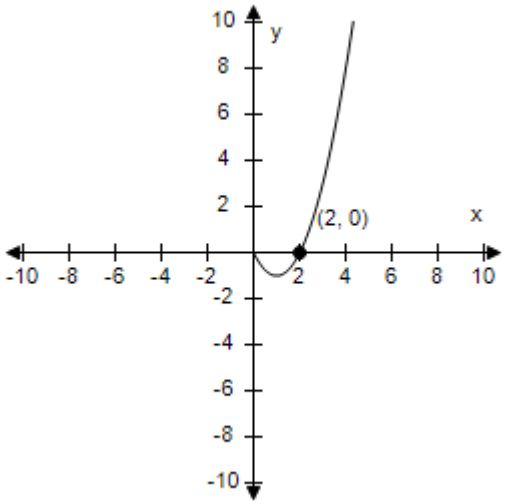
Intercepts: (0, 0)

c.



Intercepts: (0, 0), (2, 0)

d.

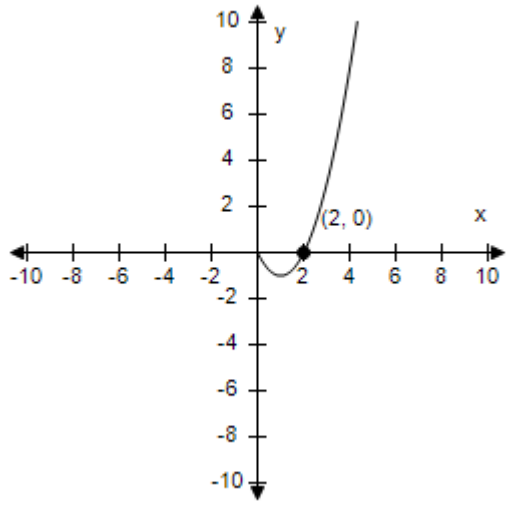


Intercepts: (2, 0), (0, 0)

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e.



Intercepts: (-2, 0), (0, 0)

ANSWER: c
POINTS: 1
REFERENCES: 1.1.52
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 5/9/2015 6:21 AM

35. Determine which point lies on the graph of the equation $y=x^2-6x-7$.

a. (4, -15)
b. (5, -15)
c. (4, -17)
d. (6, -16)
e. (5, -17)

ANSWER: a
POINTS: 1
REFERENCES: 1.1.9a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 7/6/2021 10:40 AM

36. Determine which point does **not** lie on the graph of the equation $y=-8-|x-5|$.

a. (-2, -15)
b. (-4, -17)

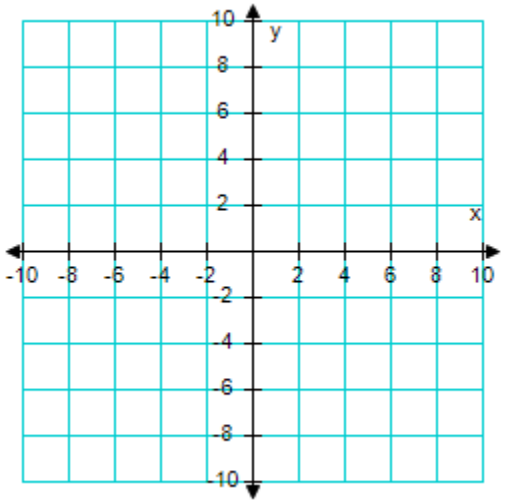
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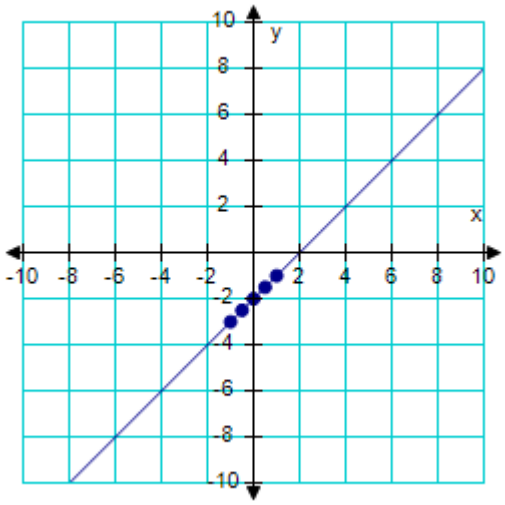
c. (7, -10)
d. (4, -6)
e. (0, -13)

ANSWER: d
POINTS: 1
REFERENCES: 1.1.10a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/19/2014 3:10 AM

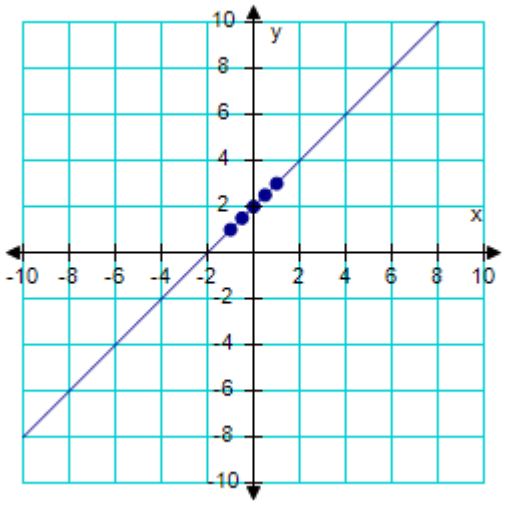
37. Create and complete a table to find the x and y coordinates of points that lie on the graph of the equation below. Plot at least 5 points along with the graph of the equation.
$y = x + 2$



a.



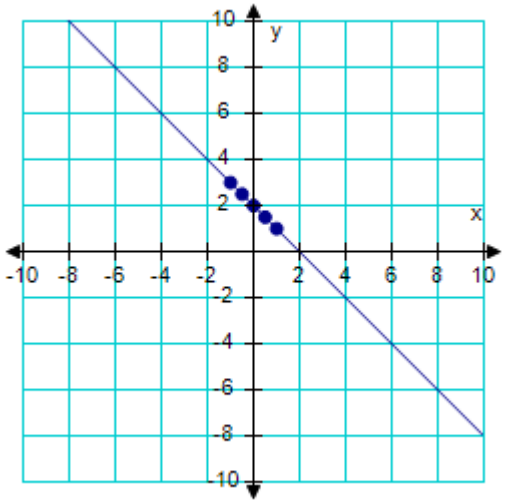
b.



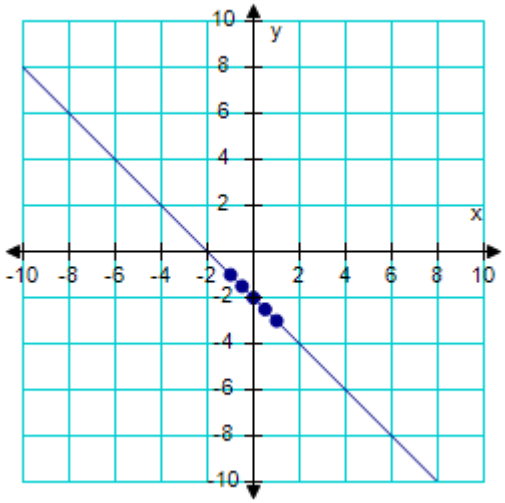
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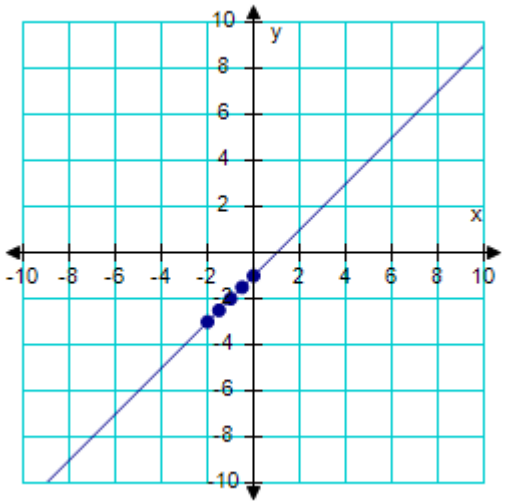
c.



d.



e.



ANSWER: b
POINTS: 1
REFERENCES: 1.1.15
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/20/2014 1:33 AM

38. Find the x- and y-intercepts of the graph of the equation $y = |13x - 7|$.

a. x-intercept: $\left(-\frac{7}{13}, 0\right)$

y-intercept: (0, 13)

b.

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x-intercept: $\left(-\frac{13}{7}, 0\right)$

y-intercept: (0, –7)

c. *x*-intercept: (–7, 0)
y-intercept: (0, 13)

d. *x*-intercept: $\left(-\frac{13}{7}, 0\right)$

y-intercept: none

e. *x*-intercept: $\left(\frac{7}{13}, 0\right)$

y-intercept: (0, 7)

ANSWER: e
POINTS: 1
REFERENCES: 1.1.21
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 11/20/2014 2:07 AM
DATE MODIFIED: 11/20/2014 3:05 AM

39. Find the *x*- and *y*-intercepts of the graph of the equation $y^2 = 8x + 5$.

a. *x*-intercept: $\left(\frac{5}{8}, 0\right)$

y-intercept: $\left(0, -\sqrt{5}\right)$

b. *x*-intercept: $\left(\frac{5}{8}, 0\right)$

y-intercepts: $\left(0, \pm\sqrt{5}\right)$

c. *x*-intercept: $\left(0, \frac{5}{8}\right)$

y-intercepts: $\left(0, \pm\sqrt{5}\right)$

d. *x*-intercept: $\left(\frac{5}{8}, 0\right)$

y-intercept: $\left(0, \sqrt{5}\right)$

e. *x*-intercept: $\left(\frac{5}{8}, 0\right)$

y-intercept: $\left(0, \sqrt{5}\right)$

ANSWER: b
POINTS: 1
REFERENCES: 1.1.22

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Section 1.1 - Graphs of Equations

QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 11/20/2014 2:42 AM
DATE MODIFIED: 7/6/2021 10:41 AM

40. Use algebraic tests to check the following for symmetry with respect to the axes and the origin.
$3x + 2y^6 = 0$

a. Symmetric with respect to the origin.
b. No symmetry.
c. Symmetric with respect to the y-axis.
d. Symmetric with respect to the x-axis.

ANSWER: d
POINTS: 1
REFERENCES: 1.1.26
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/20/2014 3:10 AM

41. Use algebraic tests to check the following for symmetry with respect to the axes and the origin.
$y = 4x^{20} - x^{10} - 3$

a. No symmetry.
b. Symmetric with respect to the y-axis.
c. Symmetric with respect to the origin.
d. Symmetric with respect to the x-axis.

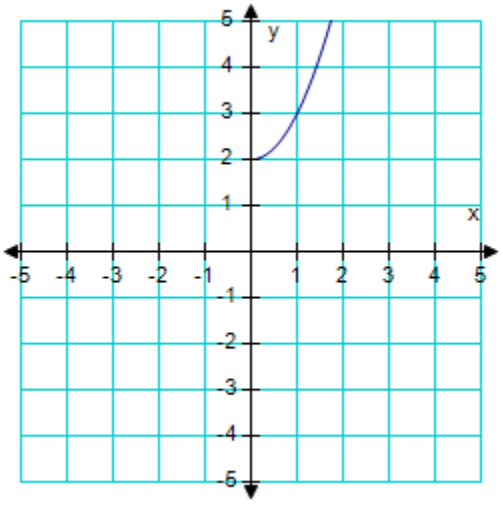
ANSWER: b
POINTS: 1
REFERENCES: 1.1.28
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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42. Assume the graph has the indicated type of symmetry. Sketch the complete graph.

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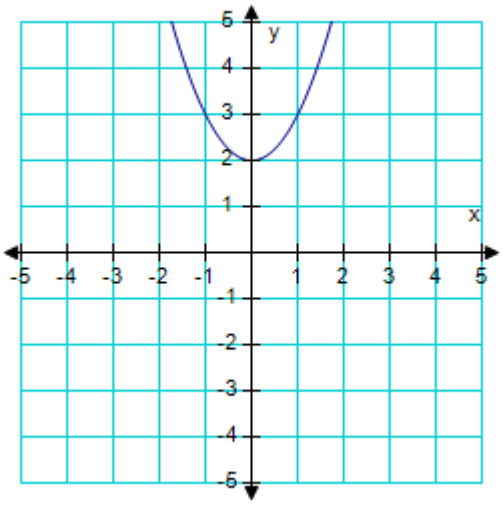
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Section 1.1 - Graphs of Equations

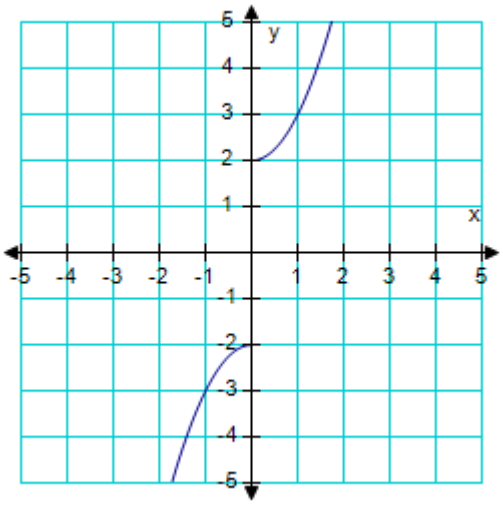


symmetric with respect to the *origin.*

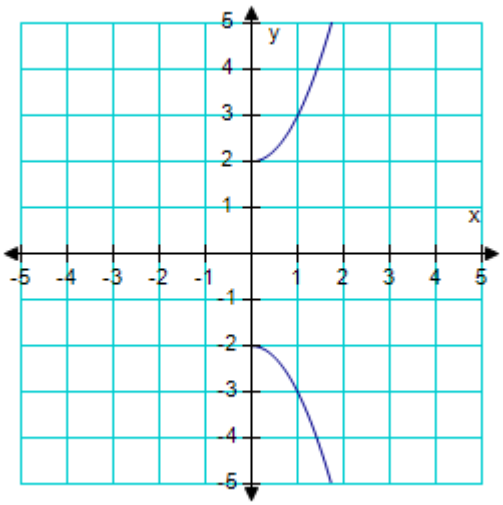
a.



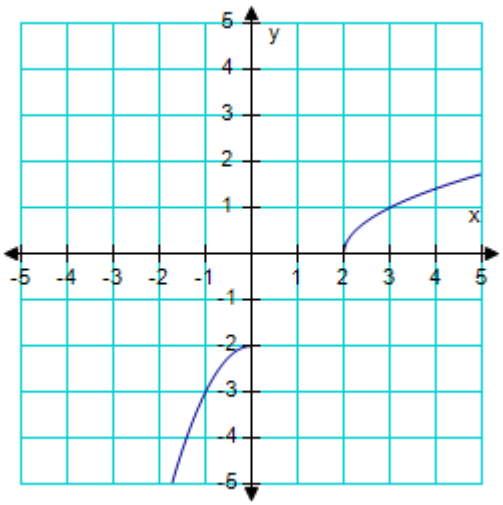
b.



c.



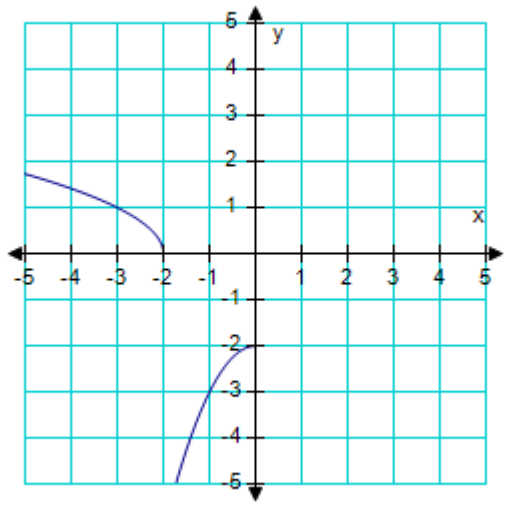
d.



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e.



ANSWER: b
POINTS: 1
REFERENCES: 1.1.35
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/20/2014 3:48 AM

43. Find the x- and y-intercepts of the graph of the equation $y = 36 - 6x$.

a. x-intercept: (6, 0)
y-intercept: (0, -6)

b. x-intercept: (36, 0)
y-intercept: (0, 6)

c. x-intercept: (-6, 0)
y-intercept: (0, -36)

d. x-intercept: (36, 0)
y-intercept: (0, 36)

e. x-intercept: (6, 0)
y-intercept: (0, 36)

ANSWER: e
POINTS: 1
REFERENCES: 1.1.22
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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Section 1.1 - Graphs of Equations

44. Find the x- and y-intercepts of the graph of the equation $y = \sqrt{-8x - 7}$.

a. x-intercept: $\left(-\frac{8}{7}, 0\right)$
y-intercept: none

b. x-intercept: $\left(-\frac{7}{8}, 0\right)$
y-intercept: $(0, -7)$

c. x-intercept: $(7, 0)$
y-intercept: none

d. x-intercept: $(-8, 0)$
y-intercept: $(0, 7)$

e. x-intercept: $\left(-\frac{7}{8}, 0\right)$
y-intercept: none

ANSWER: e
POINTS: 1
REFERENCES: 1.1.19
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 11/20/2014 6:18 AM
DATE MODIFIED: 5/11/2015 5:16 AM

45. Write the standard form of the equation of the circle with the given characteristics.
center: (–1, –5); radius: 6

a. $(x-1)^2+(y-5)^2=36$

b. $(x+5)^2+(y+1)^2=6$

c. $(x+5)^2+(y+1)^2=36$

d. $(x-5)^2+(y-1)^2=6$

e. $(x+1)^2+(y+5)^2=36$

ANSWER: e
POINTS: 1
REFERENCES: 1.1.63
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/20/2014 6:58 AM

46. Write the standard form of the equation of the circle with the given characteristics.

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center: (–5, –4); solution point: (–3, –7)

a. $(x+5)^2+(y+4)^2=13$

b. $(x-5)^2+(y+4)^2=1$

c. $(x-5)^2+(y-4)^2=13$

d. $(x-5)^2+(y-4)^2=17$

e. $(x+5)^2+(y-4)^2=17$

ANSWER: a
POINTS: 1
REFERENCES: 1.1.65
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/20/2014 7:09 AM

47. Write the standard form of the equation of the circle with the given characteristics.
endpoints of a diameter: (3, 4), (7, 8)

a. $(x-5)^2+(y-6)^2=8$

b. $(x-6)^2+(y-5)^2=8$

c. $(x+5)^2+(y+6)^2=8$

d. $(x+5)^2+(y-6)^2=340$

e. $(x-5)^2+(y+6)^2=340$

ANSWER: a
POINTS: 1
REFERENCES: 1.1.68
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/20/2014 7:50 AM

48. Find the center and radius of the circle $x^2+y^2=49$.

a. center: (0, 0), radius: 11

b. center: (-1, 1), radius: 11

c. center: (0, 0), radius: 7

d. center: (-1, -1), radius: 7

e. center: (–7, –11), radius: 7

ANSWER: c

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Section 1.1 - Graphs of Equations

POINTS: 1
REFERENCES: 1.1.69
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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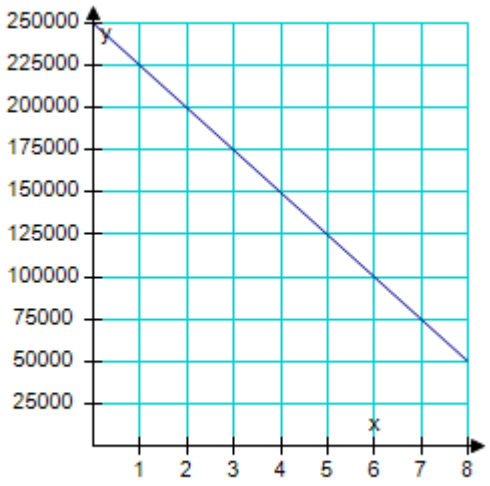
49. Find the center and radius of the circle $(x-5)^2+(y-1)^2=25$.

a. center: (1, 5), radius 5
b. center: (5, 1), radius 25
c. center: (–5, –1), radius 5
d. center: (–5, –1), radius 25
e. center: (5, 1), radius 5

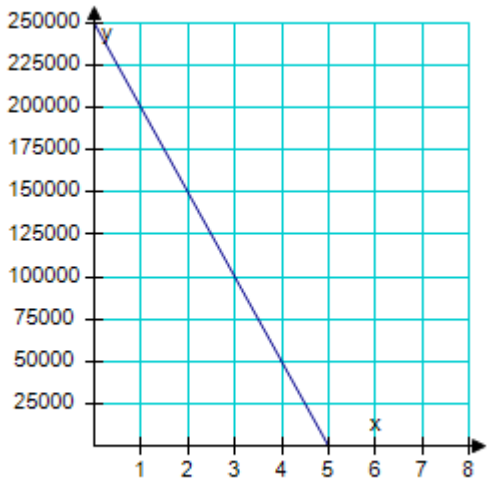
ANSWER: e
POINTS: 1
REFERENCES: 1.1.71
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/21/2014 2:06 AM

50. You purchase a house for \$250,000. The depreciated value, y, after x years is given by $y = 250{,}000 - 25{,}000x$. Sketch the graph of the equation given $0 \le x \le 8$.

a.



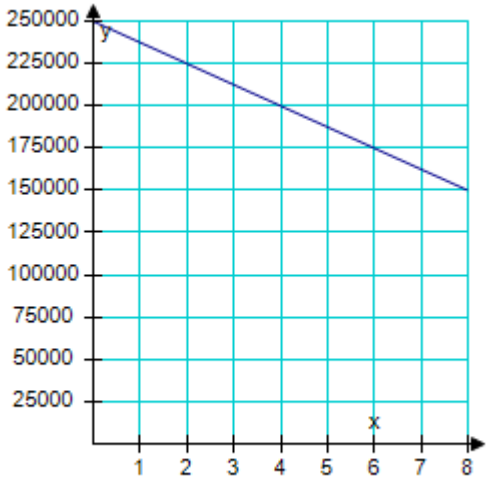
b.



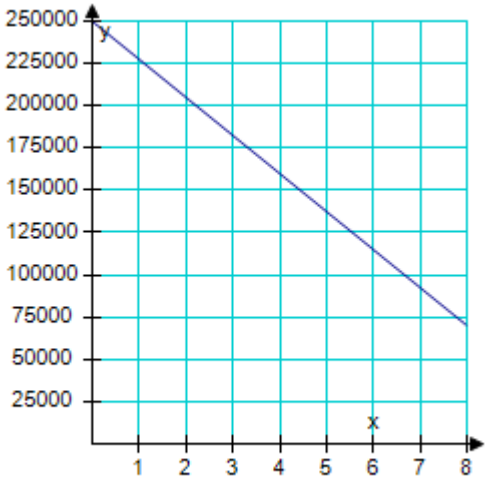
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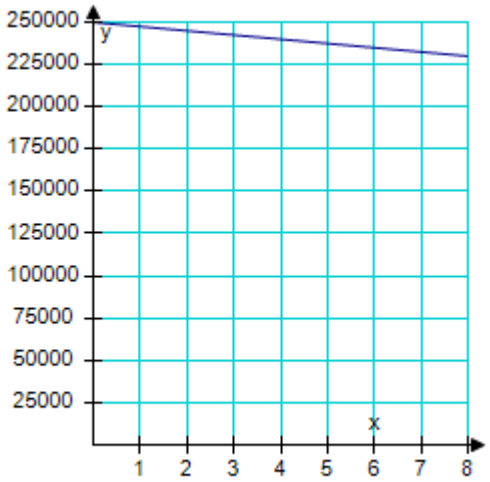
c.



d.



e.



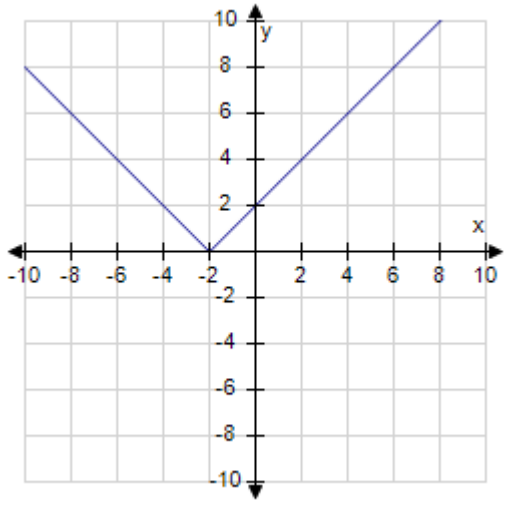
ANSWER: a
POINTS: 1
REFERENCES: 1.1.76
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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51. Find the graph of the equation.

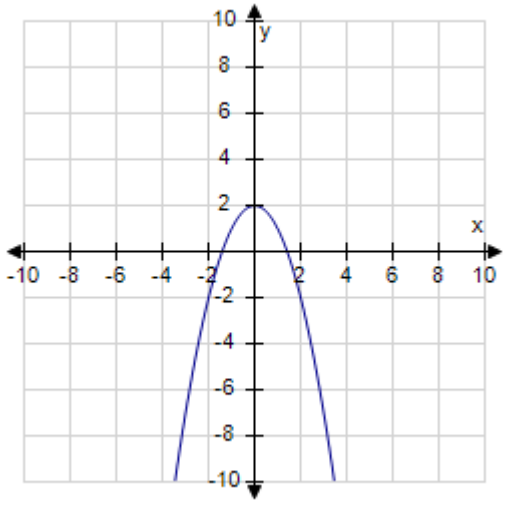
$f(x) = |x - 2|$

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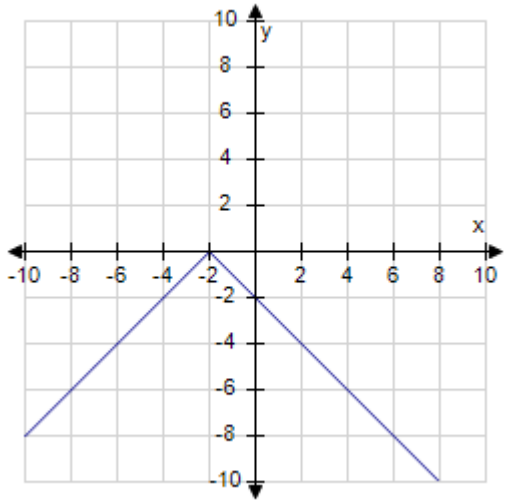
a.



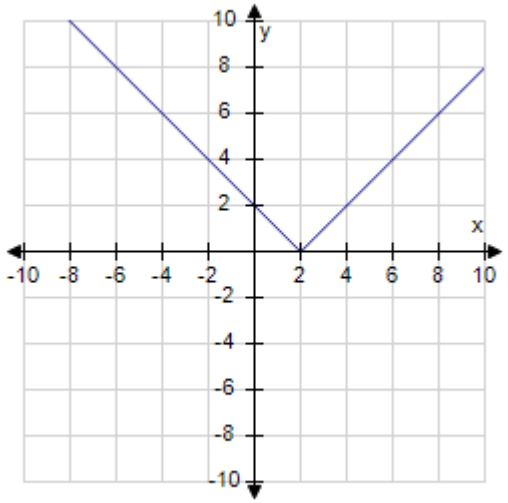
b.



c.



d.



ANSWER: d
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 5/11/2015 5:18 AM

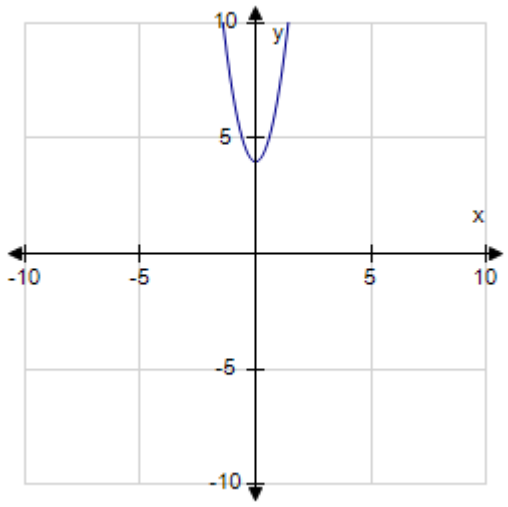
52. Find the graph of the equation.

$f(x) = \sqrt{3x - 4}$

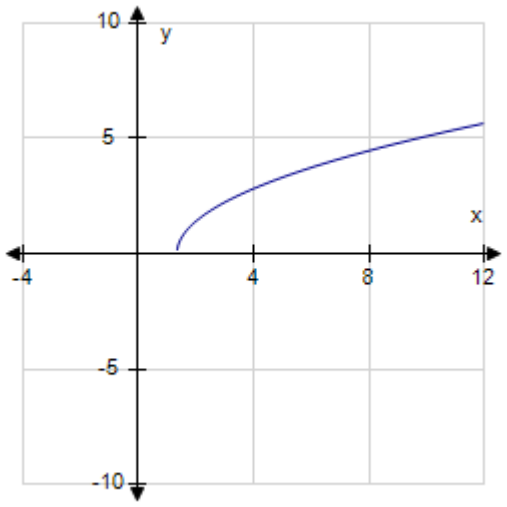
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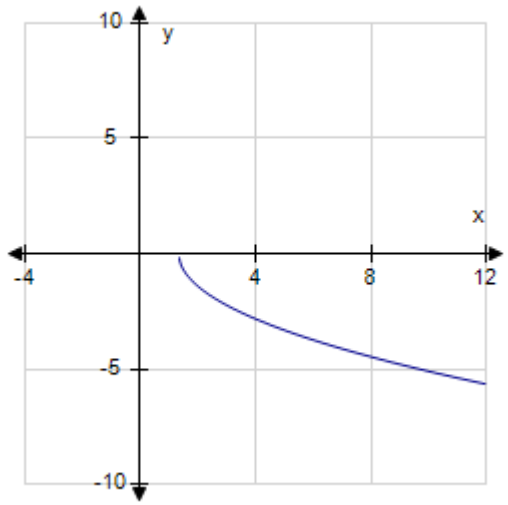
a.



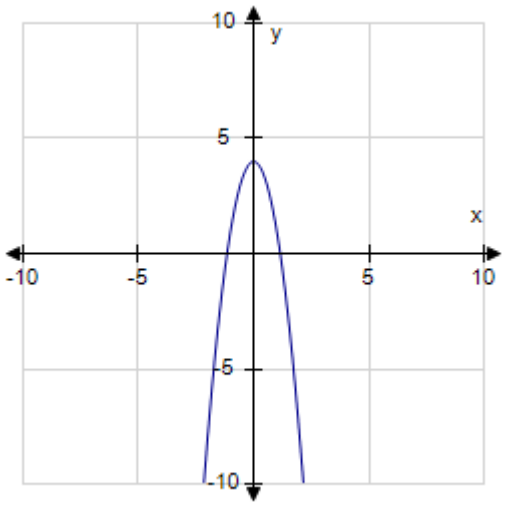
b.



c.



d.



ANSWER: b
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 5/11/2015 5:43 AM

53. Find the value of y that corresponds to $x = -4$ in the graph of the equation $2x + 3y = 13$.

a. 9
b. –7
c. –9
d. 21
e. 7

ANSWER: e

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Section 1.1 - Graphs of Equations

POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/21/2014 3:02 AM

54. Find the value of x that corresponds to $y = 7$ in the graph of the equation $4x - 3y = -37$.

a. 4
b. –16
c. –3
d. 3
e. –4

ANSWER: e
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/21/2014 3:10 AM

55. Find the y-intercept of the graph of the equation $y = 3x + 18$.

a. (0, 3)
b. (18, 0)
c. (-6, 0)
d. (0, 18)
e. (0, -6)

ANSWER: d
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/21/2014 3:14 AM

56. Find the x-intercept of the graph of the equation $y = 3x + 15$.

a. (0, -5)
b. (0, 15)
c. (15, 0)
d. (0, 3)
e. (-5, 0)

ANSWER: e

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Section 1.1 - Graphs of Equations

POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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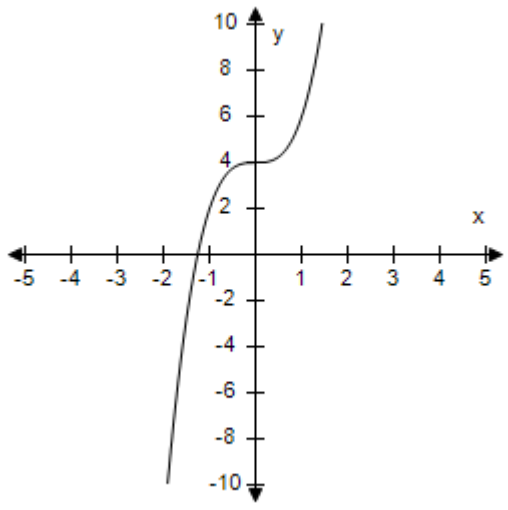
57. Find the y-intercept of the graph of the equation $4y = 3x + 12$.

a. (0, -3)
b. (-4, 0)
c. (0, 3)
d. (0, -4)
e. (0, 12)

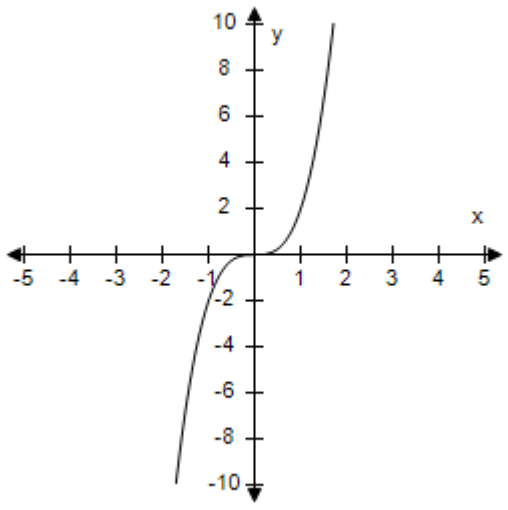
ANSWER: c
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/21/2014 3:17 AM

58. Sketch the graph of the equation $y=2x^3+2$.

a.



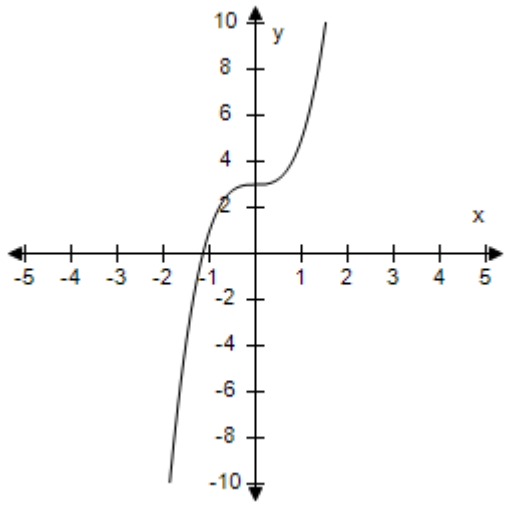
b.



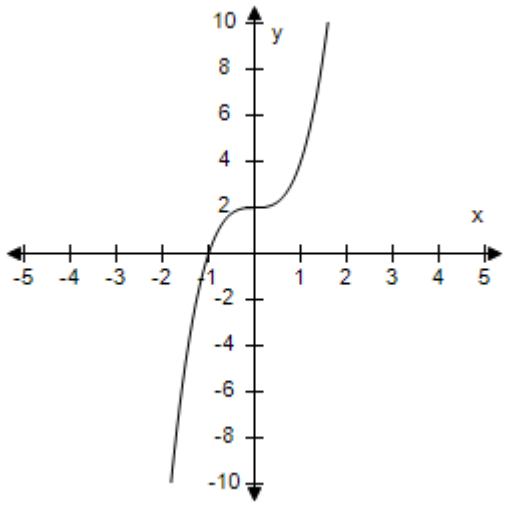
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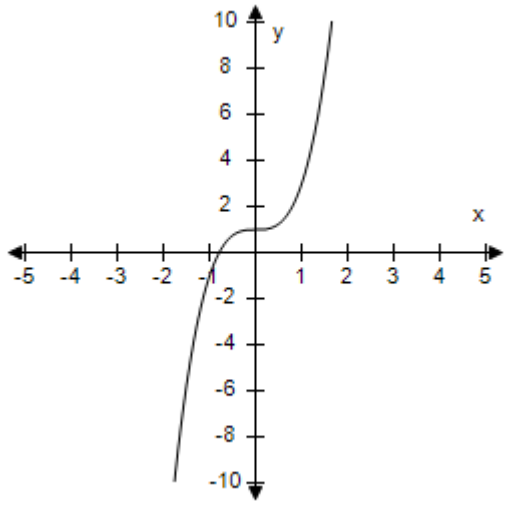
c.



d.



e.



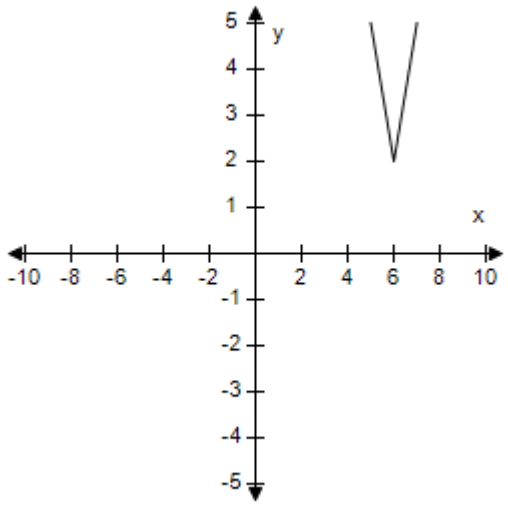
ANSWER: d
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 7/6/2021 10:52 AM

59. Sketch the graph of the equation $y = 3|x - 4| + 2$.

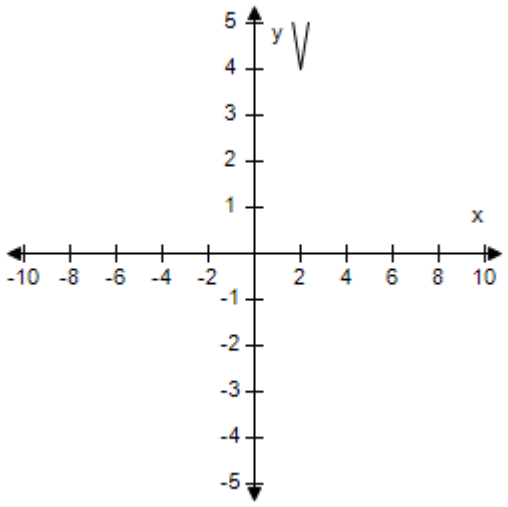
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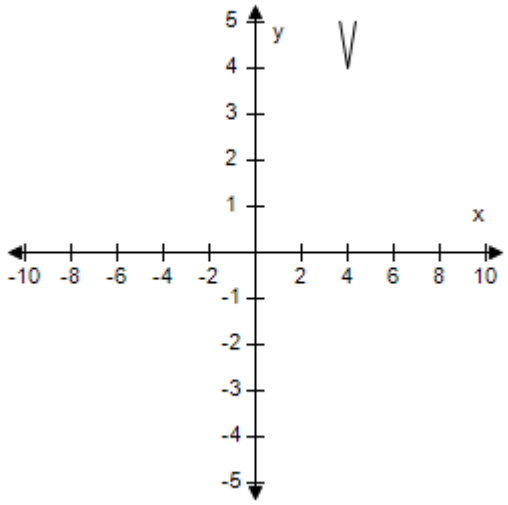
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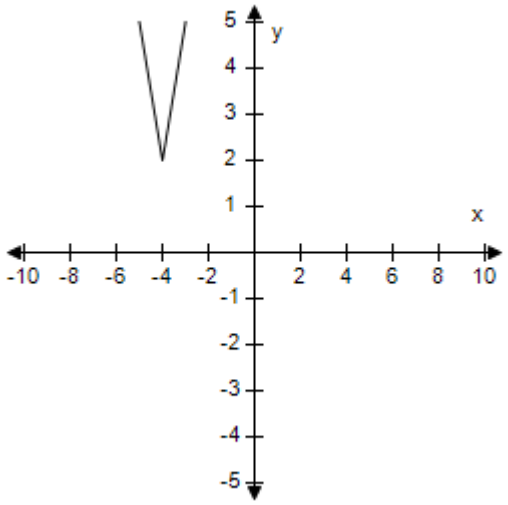
b.



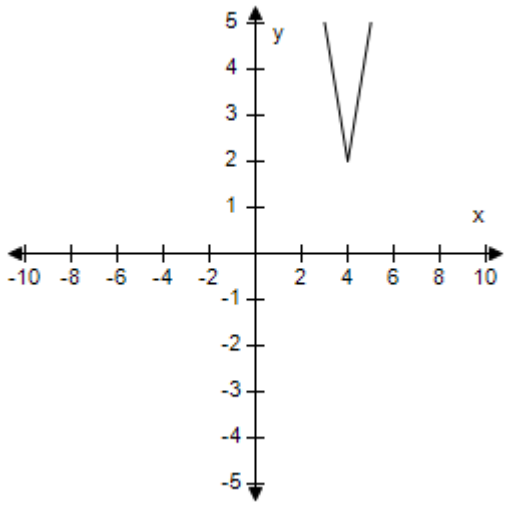
c.



d.



e.



ANSWER: e

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Section 1.1 - Graphs of Equations

POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 7/6/2021 10:56 AM

60. Find the x-intercept of the graph of the equation $y = 3\sqrt{x-6}$.

a. (0, -6)
b. (0, 6)
c. (6, 0)
d. (-6, 0)
e. (0, -18)

ANSWER: c
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/21/2014 4:02 AM

61. Find any x- or y-intercepts for the graph of the equation $y = x^2 - 8x + 12$.

a. x-intercept: (0, 12)
y-intercepts: (2, 0), (6, 0)
b. x-intercepts: (-2, 0), (-6, 0)
y-intercept: (0, 12)
c. x-intercepts: (2, 0), (6, 0)
y-intercepts: none
d. x-intercepts: (0, 2), (0, 6)
y-intercept: (12, 0)
e. x-intercepts: (2, 0), (6, 0)
y-intercept: (0, 12)

ANSWER: e
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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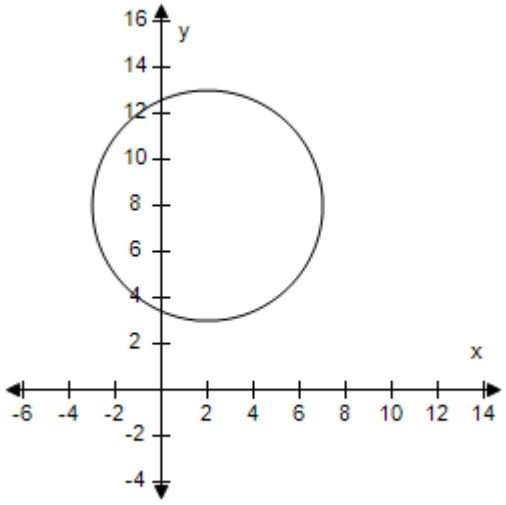
62. Graph the circle $(x-2)^2 + (y-8)^2 = 25$.

a. b.

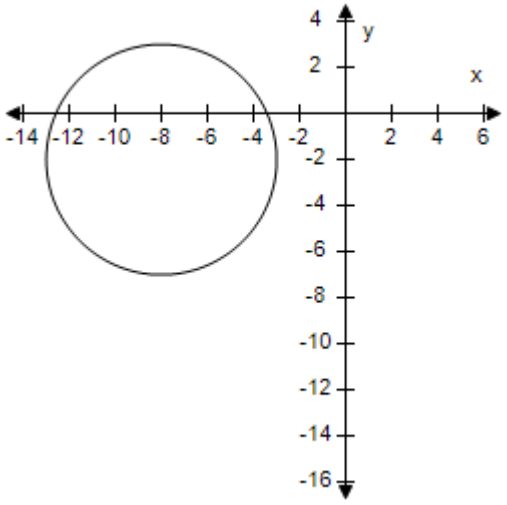
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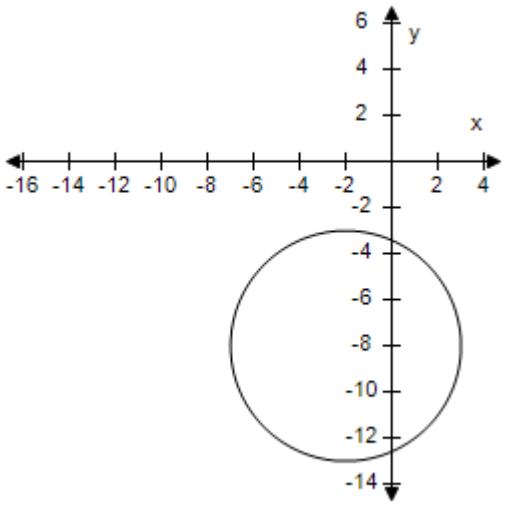
Section 1.1 - Graphs of Equations

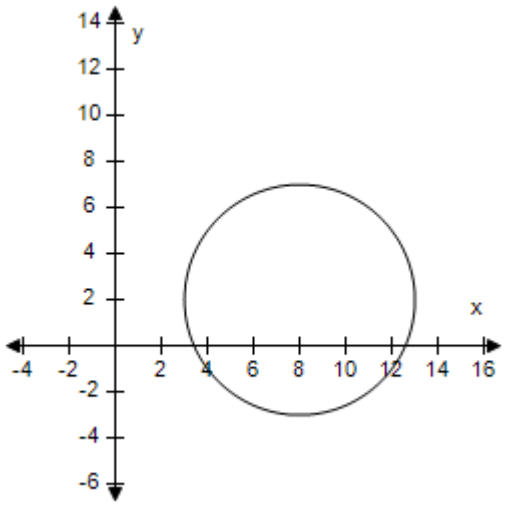


c.



d.





e. None of the above.

ANSWER: a
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 11/21/2014 4:21 AM

63. Graph the circle $(x+2)^2+(y-5)^2=9$.

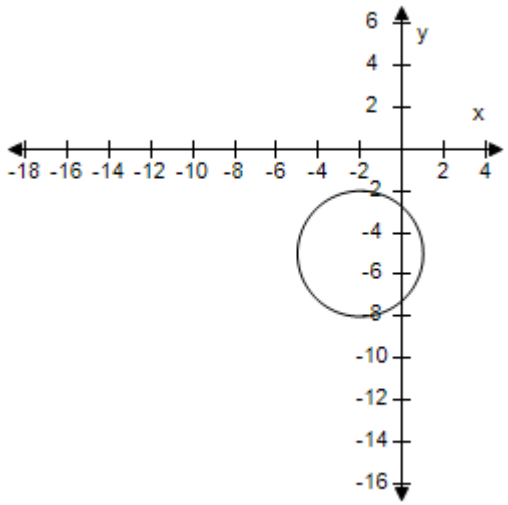
a.

b.

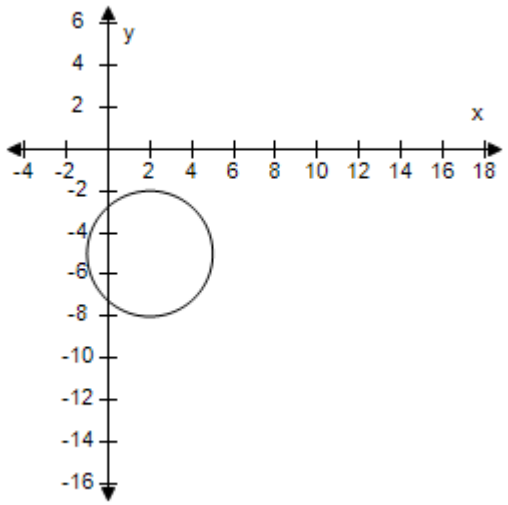
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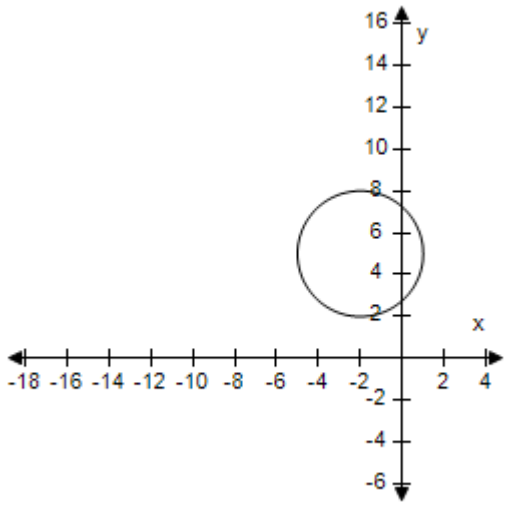
c.

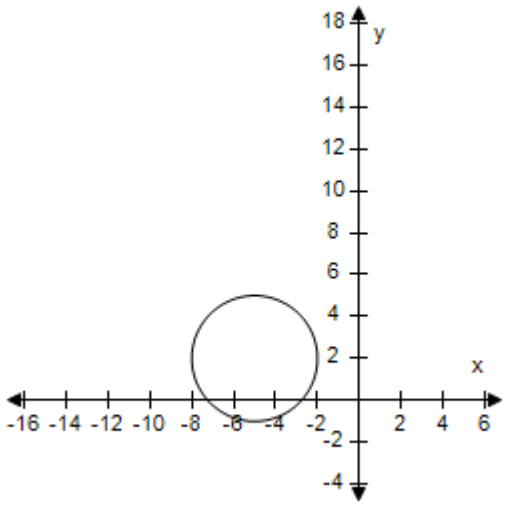


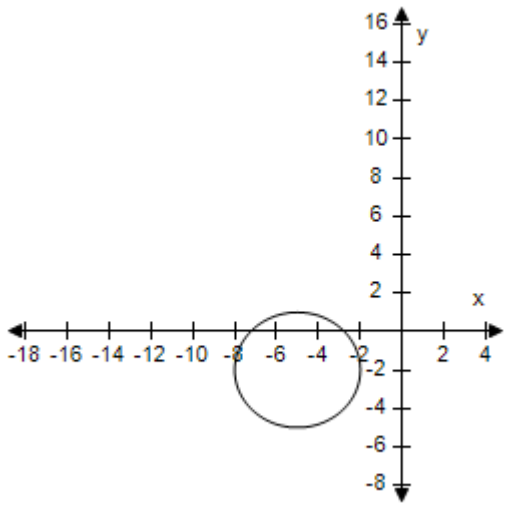
d.



e.







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Section 1.1 - Graphs of Equations

ANSWER:	c
POINTS:	1
QUESTION TYPE:	Multi-Mode (Multiple choice)
HAS VARIABLES:	True
STUDENT ENTRY MODE:	Basic
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Section 1.2 - Linear Equations in One Variable

1. Determine whether the value of $x = 0$ is a solution of the equation.

$5x - 3 = 3x + 5$

a. Yes
b. No

ANSWER: b
POINTS: 1
REFERENCES: 1.2.7
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 9/18/2014 9:13 AM

2. Determine whether the value of $x = -1$ is a solution of the equation.

$11 - 4x = 4x - 10$

a. No
b. Yes

ANSWER: a
POINTS: 1
REFERENCES: 1.2.8
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 9/18/2014 9:15 AM

3. Determine whether the value of $x = -2$ is a solution of the equation.

$6x^3 + 2x - 3 = 5x^3 + 2x - 11$

a. Yes
b. No

ANSWER: a
POINTS: 1
REFERENCES: 1.2.10
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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4. Determine whether the value of $x = 1$ is a solution of the equation.

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Section 1.2 - Linear Equations in One Variable

$$\frac{x}{4}+\frac{6x}{5}=\frac{29}{20}$$

a. No
b. Yes

ANSWER: b
POINTS: 1
REFERENCES: 1.2.12
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 9/18/2014 9:44 AM

5. Determine whether the value of $x = 5$ is a solution of the equation.

$$5+\frac{1}{x+2}=6$$

a. No
b. Yes

ANSWER: a
POINTS: 1
REFERENCES: 1.2.13
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 9/18/2014 9:49 AM

6. Determine whether the value of $x = 12$ is a solution of the equation.

$$\frac{(x+6)(x-2)}{2}=90$$

a. No
b. Yes

ANSWER: b
POINTS: 1
REFERENCES: 1.2.14
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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Section 1.2 - Linear Equations in One Variable

DATE MODIFIED: 9/18/2014 9:51 AM

7. Determine whether the value of $x = 9$ is a solution of the equation.

$\sqrt{3x-2} = 5$

a. No
b. Yes

ANSWER: b
POINTS: 1
REFERENCES: 1.2.15
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 9/18/2014 9:52 AM

8. Determine whether the equation $8(x + 4) = 8x + 32$ is an identity or a conditional equation. If conditional, indicate the condition.

a. conditional with $x = -4$ satisfying the equation
b. conditional with $x = 0$ satisfying the equation
c. identity
d. conditional with $x = 4$ satisfying the equation
e. conditional with no solution

ANSWER: c
POINTS: 1
REFERENCES: 1.2.19
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 7/6/2021 11:18 AM

9. Determine whether the equation $2(x - 1) = 2x + 3$ is an identity or a conditional equation. If conditional, indicate the condition.

a. conditional with $x = 0$ satisfying the equation
b. conditional with $x = -\frac{5}{4}$ satisfying the equation
c. identity
d. conditional with no solution
e. conditional with $x = \frac{5}{4}$ satisfying the equation

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Section 1.2 - Linear Equations in One Variable

ANSWER: d
POINTS: 1
REFERENCES: 1.2.21
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 5/11/2015 5:54 AM

10. Determine whether the equation $6(x + 5) - 9x = 6x + 5$ is an identity or a conditional equation. If conditional, indicate the condition.

a. conditional with $x = \frac{25}{9}$ satisfying the equation
b. conditional with x = 0 satisfying the equation
c. conditional with $x = -\frac{35}{9}$ satisfying the equation
d. conditional with no solution
e. identity

ANSWER: a
POINTS: 1
REFERENCES: 1.2.24
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
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11. Justify each step of the solution.

$$\begin{aligned} 8x+64 &= 95 \\ 8x+64-64 &= 95-64 \\ 8x &= 31 \\ \frac{8x}{8} &= \frac{31}{8} \\ x &= \frac{31}{8} \end{aligned}$$

a. Original equation.
Divide each side by 8.
Simplify.
Subtract 64 from each side.
Simplify.
b. Original equation.

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Subtract 64 from each side.
Simplify.
Divide each side by 8.
Simplify.

c. Simplify.
Original equation.
Subtract 64 from each side.
Divide each side by 8.
Simplify.

d. Original equation.
Subtract 64 from each side.
Divide each side by 8.
Simplify.
Simplify.

e. Original equation.
Simplify.
Subtract 64 from each side.
Divide each side by 8.
Simplify.

ANSWER: b
POINTS: 1
REFERENCES: 1.2.31
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 9/19/2014 3:59 AM

12. Justify each step of the solution.

$$\begin{aligned} 9(x-11)+29 &= 20 \\ 9x-99+29 &= 20 \\ 9x-70 &= 20 \\ 9x-70+70 &= 20+70 \\ 9x &= 90 \\ \frac{9x}{9} &= \frac{90}{9} \\ x &= 10 \end{aligned}$$

a. Original equation.
Simplify.
Simplify.
Add 70 to each side.
Remove parentheses.
Divide each side by 9.
Simplify.

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b. Original equation.
Remove parentheses.
Add 70 to each side.
Divide each side by 9.
Simplify.
Simplify.
Simplify.

c. Original equation.
Remove parentheses.
Simplify.
Add 70 to each side.
Simplify.
Divide each side by 9.
Simplify.

d. Original equation.
Divide each side by 9.
Simplify.
Add 70 to each side.
Simplify.
Remove parentheses.
Simplify.

e. Simplify.
Original equation.
Remove parentheses.
Add 70 to each side.
Simplify.
Divide each side by 9.
Simplify.

ANSWER: c
POINTS: 1
REFERENCES: 1.2.32
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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13. Solve the equation.

$x + 8 = 12$

a. $x = 4$

b. $x = 5$

c. $x = 21$

d. $x = 22$

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e. $x = 20$

ANSWER: a
POINTS: 1
REFERENCES: 1.2.33
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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14. Solve the equation.

$-1 - 8x = 2$

a. $x = \frac{3}{4}$

b. $x = -\frac{1}{4}$

c. $x = -\frac{3}{8}$

d. $x = -\frac{1}{8}$

e. $x = \frac{1}{8}$

ANSWER: c
POINTS: 1
REFERENCES: 1.2.34
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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15. Solve the equation.

$-1 - 5x = 9$

a. $x = 3$
b. $x = -5$
c. $x = -2$
d. $x = 1$
e. $x = -4$

ANSWER: c

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Section 1.2 - Linear Equations in One Variable

POINTS: 1
REFERENCES: 1.2.35
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
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16. Solve the equation.

$7y + 1 = 2y - 7 + 8y$

a. $y = \frac{8}{3}$

b. $y = \frac{3}{8}$

c. $y = \frac{2}{7}$

d. $y = \frac{7}{2}$

e. $y = -\frac{8}{3}$

ANSWER: a
POINTS: 1
REFERENCES: 1.2.40
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
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17. Solve the equation.

$x - 6(2x + 6) = 6 - 11x$

a. $x = 6$
b. $x = -11$
c. $x = -6$
d. $x = 11$
e. No solution

ANSWER: e
POINTS: 1
REFERENCES: 1.2.41
QUESTION TYPE: Multi-Mode (Multiple choice)

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Section 1.2 - Linear Equations in One Variable

HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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18. Solve the equation.

$57x - 56 = 8x + 7(7x - 8)$

a. $x = 8$
b. $x = 57$
c. $x = -8$
d. $x = -57$
e. All real numbers

ANSWER: e
POINTS: 1
REFERENCES: 1.2.42
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
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19. Solve the equation.

$-7(x + 9) + 9 = 6(x + 6)$

a. $x = -\frac{18}{13}$
b. $x = \frac{90}{13}$
c. $x = \frac{27}{13}$
d. $x = -\frac{9}{13}$
e. $x = -\frac{90}{13}$

ANSWER: e
POINTS: 1
REFERENCES: 1.2.43
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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20. Solve the equation.

$$\frac{x}{8} - \frac{x}{2} = 6 + \frac{6x}{16}$$

a. $x = 8$
b. $x = -8$
c. $x = 16$
d. $x = 12$
e. $x = 96$

ANSWER: b
POINTS: 1
REFERENCES: 1.2.44
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 5/11/2015 6:24 AM

21. Solve the equation.

$$-\frac{1}{5}(z-8)+\frac{1}{8}(z+3)=0$$

a. $z = \frac{632}{3}$
b. $z = \frac{79}{3}$
c. $z = \frac{49}{3}$
d. $z = \frac{1027}{3}$
e. $z = -\frac{1027}{3}$

ANSWER: b
POINTS: 1
REFERENCES: 1.2.45
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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22. Solve the equation.

$$\frac{3x}{2} + \frac{1}{4}(x-2) = 10$$

a. $x = 5$
b. $x = 3$
c. $x = 6$
d. $x = 8$
e. $x = 7$

ANSWER: c
POINTS: 1
REFERENCES: 1.2.46
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 5/11/2015 6:45 AM

23. Solve the equation.

$$0.4x + 0.9(10-x) = 8$$

a. $x = 3$
b. $x = 2$
c. $x = 1$
d. $x = 4$
e. $x = -2$

ANSWER: b
POINTS: 1
REFERENCES: 1.2.47
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 5/11/2015 6:46 AM

24. Solve the equation.

$$0.9x + 0.1(2-x) = 2$$

a. $x = 3$
b. $x = 2.25$
c. $x = 9$

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d. $x = 4.5$
e. $x = 1.125$

ANSWER: b
POINTS: 1
REFERENCES: 1.2.48
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 5/11/2015 6:47 AM

25. Solve the equation.

$$\frac{7x}{6} - \frac{x}{2} = 4$$

a. $x = 9$
b. $x = 10$
c. $x = 8$
d. $x = 6$
e. $x = 7$

ANSWER: d
POINTS: 1
REFERENCES: 1.2.50
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 7/6/2021 11:25 AM

26. Solve the equation.

$$\frac{7x}{2} + 2x = \frac{33}{2}$$

a. $x = 4$
b. $x = 5$
c. $x = 6$
d. $x = 7$
e. $x = 3$

ANSWER: e
POINTS: 1
REFERENCES: 1.2.51
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True

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Section 1.2 - Linear Equations in One Variable

STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 5/11/2015 6:56 AM

27. Solve the equation.

$8x + 4 = 9(x - 4) - x$

a. $x = 9$
b. $x = 8$
c. $x = -8$
d. $x = -9$
e. No solution.

ANSWER: e
POINTS: 1
REFERENCES: 1.2.53
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 5/11/2015 6:58 AM

28. Solve the equation.

$20(x + 5) - 3(5x + 1) = 5(x + 8)$

a. $x = 9$
b. $x = 5$
c. $x = 8$
d. $x = 20$
e. No solution.

ANSWER: e
POINTS: 1
REFERENCES: 1.2.54
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 5/11/2015 6:59 AM

29. Solve the equation.

$-3(x + 4) - 4(x + 6) = 9(x - 7)$

a. $x = -\frac{3}{4}$

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b. $x = \frac{3}{4}$

c. $x = -\frac{9}{4}$

d. $x = \frac{27}{16}$

e. $x = -\frac{27}{16}$

ANSWER: d
POINTS: 1
REFERENCES: 1.2.55
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
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30. Solve the equation.

$$\frac{10+y}{y} + \frac{-6+y}{y} = 9$$

a. $y = \frac{4}{7}$

b. $y = \frac{16}{7}$

c. $y = -\frac{4}{7}$

d. $y = \frac{24}{7}$

e. $y = \frac{8}{7}$

ANSWER: a
POINTS: 1
REFERENCES: 1.2.56
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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31. Solve the equation.

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$$\frac{(9x-4)}{(9x+4)} = \frac{4}{5}$$

a. $x = 4$
b. $x = 9$
c. $x = 20$
d. $x = 16$
e. $x = 36$

ANSWER: a
POINTS: 1
REFERENCES: 1.2.57
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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DATE MODIFIED: 5/11/2015 7:03 AM

32. Solve the equation.

$$\frac{23}{x} - 9 = \frac{8}{x} + 8$$

a. $x = 8$
b. $x = \frac{15}{17}$
c. $x = \frac{23}{8}$
d. $x = 12$
e. $x = 23$

ANSWER: b
POINTS: 1
REFERENCES: 1.2.60
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
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33. Solve the equation.

$$\frac{x}{x+3} + \frac{3}{x+3} + 5 = 0$$

a. $x = 8$
b. $x = -2$

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c. $x = -15$
d. $x = 11$
e. No solution.

ANSWER: e
POINTS: 1
REFERENCES: 1.2.63
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
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34. Solve the equation.

$$\frac{4}{(x-8)(x-4)} = \frac{1}{x-8} + \frac{4}{x-4}$$

a. $x = 8$
b. $x = 4$
c. $x = \frac{1}{4}$
d. $x = 10$
e. No solution.

ANSWER: e
POINTS: 1
REFERENCES: 1.2.65
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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35. Solve the equation.

$$\frac{-7}{(x-5)(x+7)} = \frac{1}{x-5} + \frac{5}{x+7}$$

a. $x = -\frac{7}{3}$
b. $x = \frac{59}{6}$
c. $x = \frac{11}{6}$

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d. $x = \frac{2}{3}$

e. $x = \frac{13}{2}$

ANSWER: c
POINTS: 1
REFERENCES: 1.2.66
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 5/11/2015 7:20 AM

36. Solve the equation.

$$\frac{1}{x-2} + \frac{1}{x+2} = \frac{34}{x^2-4}$$

a. $x = 16$
b. $x = 17$
c. $x = 15$
d. $x = 18$
e. $x = 19$

ANSWER: b
POINTS: 1
REFERENCES: 1.2.67
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 5/11/2015 7:21 AM

37. Solve the equation.

$$\frac{6}{x} - \frac{2}{x+3} = \frac{3(x+5)}{x^2+3x}$$

a. $x = 11$
b. $x = 2$
c. $x = 6$
d. $x = 5$
e. No solution.

ANSWER: e
POINTS: 1

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REFERENCES: 1.2.70
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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38. Solve the equation.

$(x+5)^2+11=(x+6)^2$

a. $x = 5$
b. $x = 6$
c. $x = 11$
d. $x = 0$
e. No solution.

ANSWER: d
POINTS: 1
REFERENCES: 1.2.71
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
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39. Solve the equation.

$(x+4)^2+16=(x-8)^2$

a. $x=\frac{17}{6}$
b. $x=-\frac{4}{3}$
c. $x=-\frac{8}{3}$
d. $x=\frac{4}{3}$
e. $x=-\frac{17}{6}$

ANSWER: d
POINTS: 1
REFERENCES: 1.2.72
QUESTION TYPE: Multi-Mode (Multiple choice)

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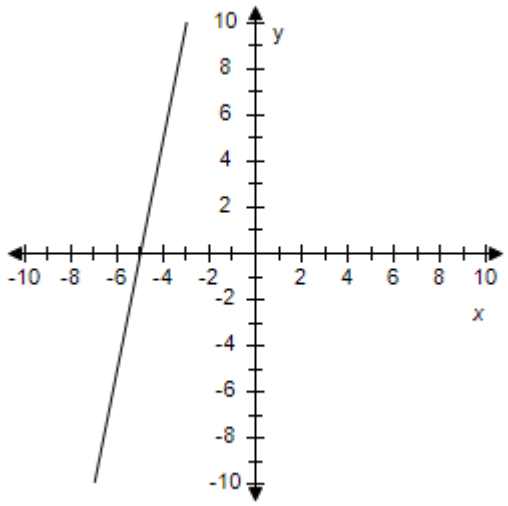
Section 1.2 - Linear Equations in One Variable

HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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40. Use a graphing utility to graph the equation and approximate any x-intercepts.

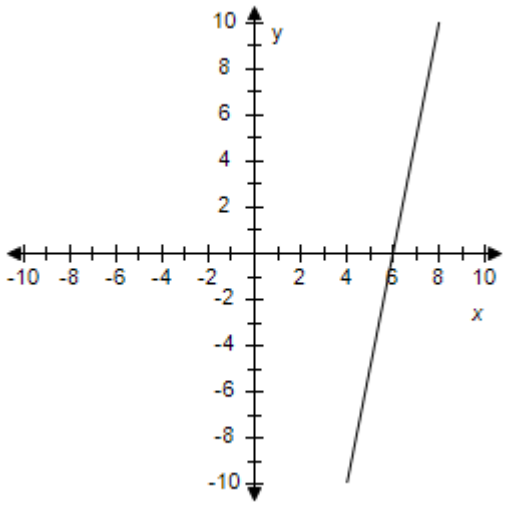
$y = 5(x - 1) - 25$

a.



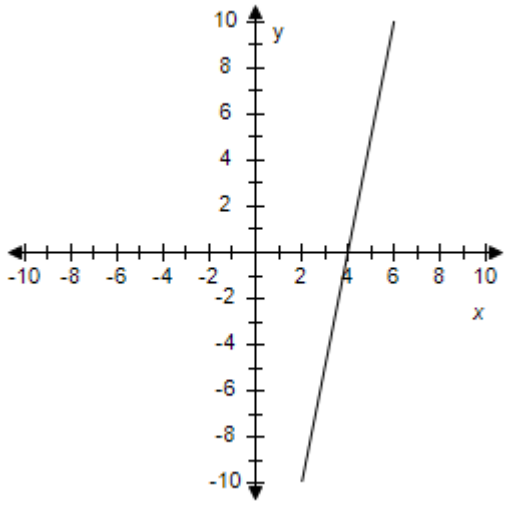
$x = -5$

b.



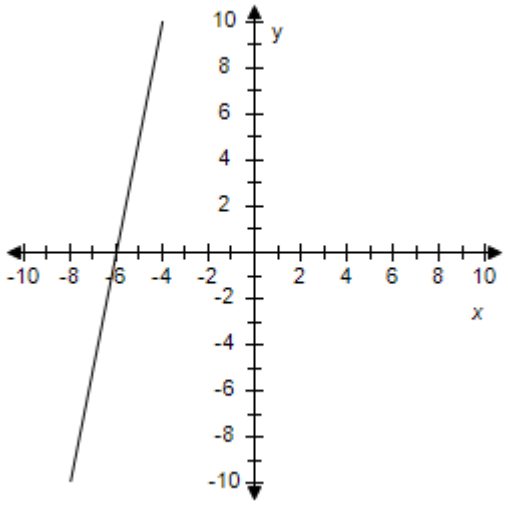
$x = 6$

c.



$x = 4$

d.

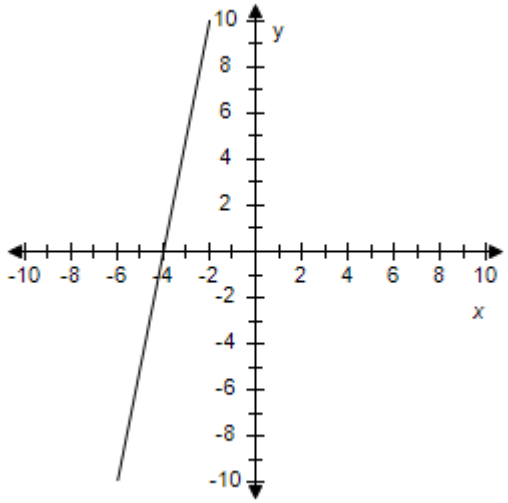


$x = -6$

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e.



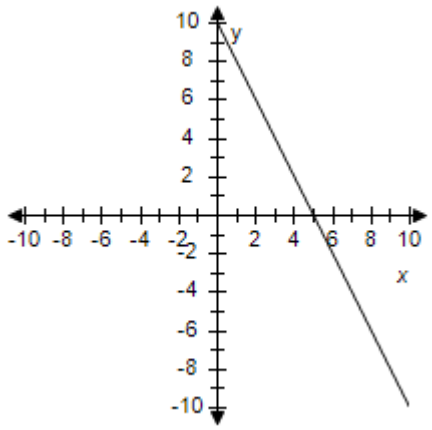
$x = -4$

ANSWER: b
POINTS: 1
REFERENCES: 1.2.75
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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41. Use a graphing utility to graph the equation and approximate any x-intercepts.

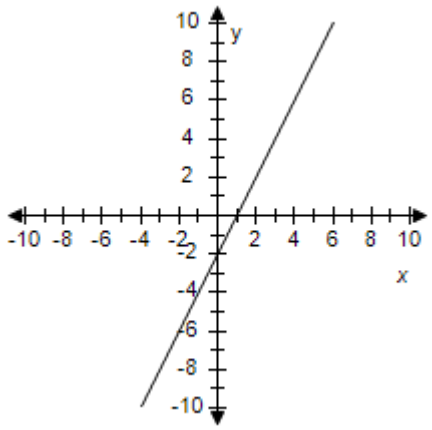
$y = 4 - (2x - 6)$

a.



$x = 5$

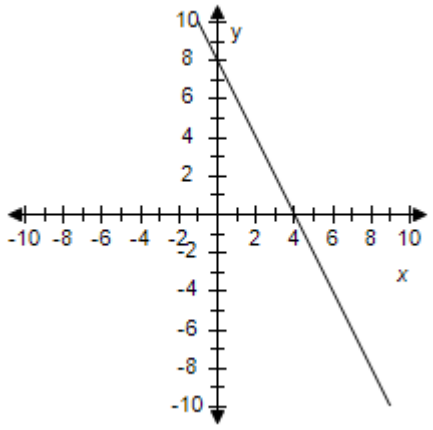
b.



$x = 1$

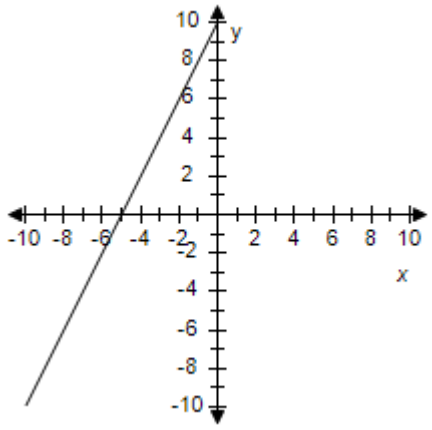
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c.



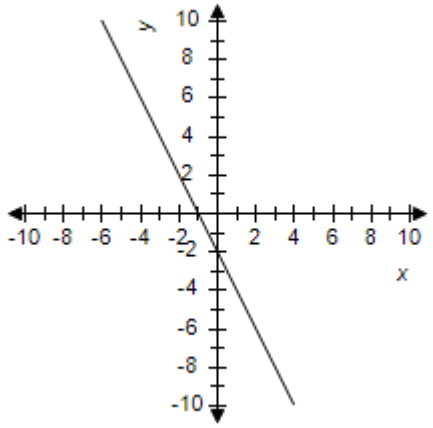
$x = 4$

d.



$x = -5$

e.



$x = -1$

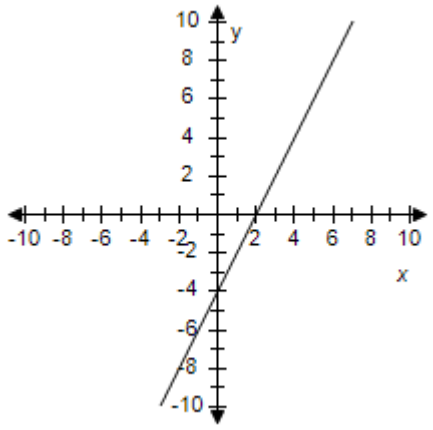
ANSWER: a
POINTS: 1
REFERENCES: 1.2.77
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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42. Use a graphing utility to graph the equation and approximate any x-intercepts.

$y = 10 + 2(x - 4)$

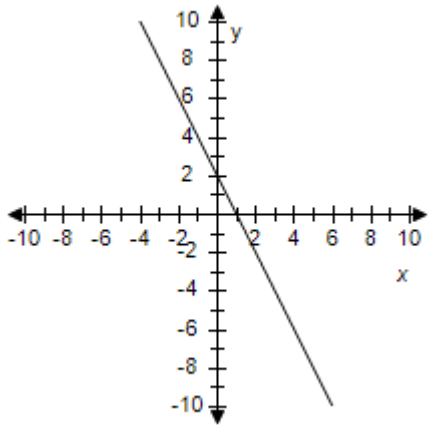
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a.



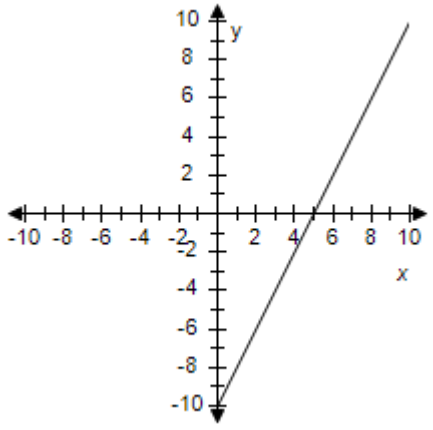
$x = 2$

b.



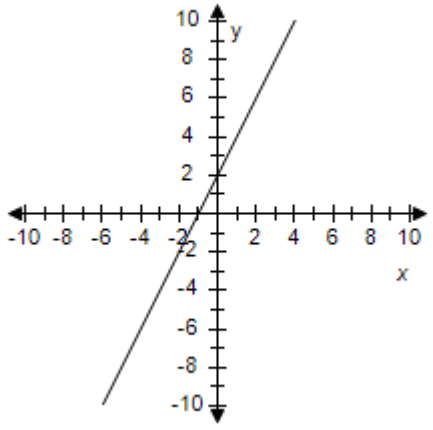
$x = 1$

c.



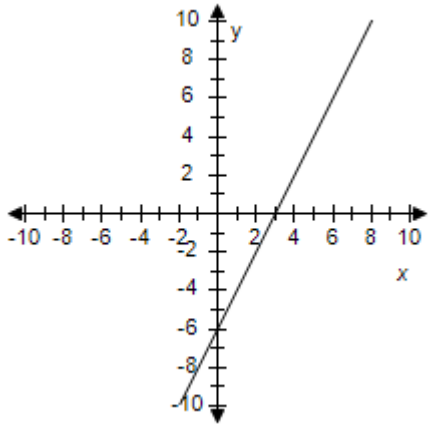
$x = 5$

d.



$x = -1$

e.



$x = 3$

ANSWER: d
POINTS: 1
REFERENCES: 1.2.78
QUESTION TYPE: Multi-Mode (Multiple choice)

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Section 1.2 - Linear Equations in One Variable

HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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43. Find the x- and y-intercepts of the graph of the equation algebraically.

$y = 2 - (3 - x)$

a. x-intercept: (1, 0)
   y-intercept: (0, –3)
b. x-intercept: (2, 0)
   y-intercept: (0, –3)
c. x-intercept: (-2, 0)
   y-intercept: (0, –3)
d. x-intercept: (2, 0)
   y-intercept: (0, –1)
e. x-intercept: (1, 0)
   y-intercept: (0, –1)

ANSWER: e
POINTS: 1
REFERENCES: 1.2.84
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
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44. A student states that the equation

$-4(x + 6) = -4x + 24$

is an identity. Describe and correct student's error.

a. The negative sign was not distributed to the x.
b. The negative sign was not distributed to the $4x$.
c. The negative sign was not distributed to the 6.
d. The negative sign was not distributed to the –4.
e. The negative sign was not distributed to the –24.

ANSWER: c
POINTS: 1
REFERENCES: 1.2.92
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic

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Section 1.2 - Linear Equations in One Variable

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45. Solve the equation for x. (Round your answer to three decimal places.)

$0.275x + 0.715(550 - x) = 290$

a. $x = 0.715$
b. $x = 0.275$
c. $x = 290$
d. $x = 234.659$
e. $x = 0.44$

ANSWER: d
POINTS: 1
REFERENCES: 1.2.93
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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DATE MODIFIED: 7/6/2021 12:01 PM

46. Solve the equation for x. (Round your answer to three decimal places.)

$$\frac{2}{6.309} - \frac{2}{x} = 4$$

a. $x = -0.543$
b. $x = 12.618$
c. $x = -12.618$
d. $x = 0.543$
e. $x = 23.236$

ANSWER: a
POINTS: 1
REFERENCES: 1.2.96
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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47. Solve the equation for x.

$5(x + 1) - ax = x + 6$

a. $x = \dfrac{1}{4 - a}, a \neq -4$

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b. $x = \dfrac{1}{4-a}, a \neq 4$

c. $x = \dfrac{1}{6-a}, a \neq 6$

d. $x = \dfrac{1}{4+a}, a \neq -4$

e. $x = \dfrac{1}{4+a}, a \neq 4$

ANSWER: b
POINTS: 1
REFERENCES: 1.2.97
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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48. Solve the equation for x.

$6 + ax = 13 - bx$

a. $x = \dfrac{7}{a-b}, a \neq -b$

b. $x = \dfrac{7}{a+b}, a \neq -b$

c. $x = \dfrac{19}{a-b}, a \neq -b$

d. $x = \dfrac{7}{a+b}, a \neq b$

e. $x = \dfrac{19}{a+b}, a \neq -b$

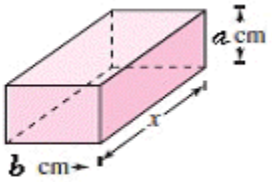
ANSWER: b
POINTS: 1
REFERENCES: 1.2.100
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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49. If $a = 8$ and $b = 4$, then the surface area S of the rectangular solid in the figure is $S = 2(32) + 2(8x) + 2(4x)$. Find the length x of the box if the surface area is 232 square centimeters.

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Section 1.2 - Linear Equations in One Variable



a. $x = 7$ cm
b. $x = 8$ cm
c. $x = 6$ cm
d. $x = 9$ cm
e. $x = 5$ cm

ANSWER: a
POINTS: 1
REFERENCES: 1.2.106
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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50. Complete the table and use it to find the interval in which the solution of the equation $3.4x - 5.8 = 0$ is located. Explain your reasoning.

	-1	0	1	2	3	4
$3.4x - 5.8$						

-1 0 1 2 3 4 $3.4x - 5.8$ –9.2 –5.8 –2.4 1 4.4

7.8

-1	0	1	2	3	4	
$3.4x - 5.8$	–9.2	–5.8	–2.4	1	4.4	7.8

a.

	-1	0	1	2	3	4
$3.4x - 5.8$	–9.2	–5.8	–2.4	1	4.4	7.8

$1 < x < 2$ The expression changes from negative to positive in this interval.

b.

	-1	0	1	2	3	4
$3.4x - 5.8$	9.2	5.8	2.4	1	4.4	7.8

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$1 < x < 2$ The expression changes from negative to positive in this interval.

c.

	-1	0	1	2	3	4
$3.4x - 5.8$	9.2	–5.8	–2.4	1	4.4	7.8

$1 < x < 2$ The expression changes from negative to positive in this interval.

d.

	-1	0	1	2	3	4
$3.4x - 5.8$	–9.2	–5.8	2.4	1	4.4	7.8

$1 < x < 2$ The expression changes from negative to positive in this interval.

e.

	-1	0	1	2	3	4
$3.4x - 5.8$	–9.2	5.8	–2.4	1	4.4	7.8

$1 < x < 2$ The expression changes from negative to positive in this interval.

ANSWER: a
POINTS: 1
REFERENCES: 1.2.119
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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51. Determine which of the following values of x is a solution to the equation.

$$4 + \frac{1}{x+3} = 5$$

a. $x = -2$
b. $x = -\frac{1}{2}$
c. $x = -3$
d. $x = 4$
e. $x = 2$

ANSWER: a
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 2.1.3a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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52. Determine which of the following values of x is a solution to the equation.

$x^2 - 8x + 15 = 0$

a. $x = -5, x = 3$
b. $x = 5$
c. $x = 5, x = 3$
d. $x = 5, x = -3$
e. $x = -3$

ANSWER: c
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 2.1.4c
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 5/11/2015 8:13 AM

53. Which of the following equations is not a conditional equation?

a. $6(x - 2) = 4x + 4$
b. $6(x - 2) = 6x - 2$
c. $x^2 + 4x - 12 = (x + 6)(x - 2) + 3$
d. $x^2 + 12x + 36 = (x + 6)^2 + 4x$
e. $x^2 + 6(-2x - 6) = x^2 - 12x - 36$

ANSWER: e
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 2.1.9
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
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54. Which of the following equations is not an identity equation?

a. $-8 + \dfrac{1}{x+1} = \dfrac{-8x - 7}{x+1}$
b. $-8(x + 3) = -8x + 3$

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c. $-(-8-x)=x+8$

d. $\frac{8}{x}+\frac{3}{x}=\frac{11x}{x^2}$

e. $x^2-8(3x+8)=x^2-24x-64$

ANSWER: b
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 2.1.11
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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55. Solve:

$-5(x-5)=7(2-x)-2$

a. $x=-\frac{17}{4}$

b. $x=-\frac{37}{12}$

c. $x=\frac{13}{4}$

d. $x=\frac{37}{2}$

e. $x=-\frac{13}{2}$

ANSWER: e
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 2.1.22
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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56. Solve:

$\frac{x}{9}-\frac{x}{3}=7+\frac{7x}{27}$

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a. $x = -\frac{189}{13}$

b. $x = -\frac{9}{2}$

c. $x = -27$

d. $x = -\frac{2}{9}$

e. $x = \frac{189}{5}$

ANSWER: a
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 2.1.29
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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57. Solve:

$$\frac{4}{3x+1} - \frac{18x}{3x-1} = -6$$

a. $x = -\frac{5}{3}$

b. $x = -\frac{1}{3}$

c. $x = -\frac{1}{5}$

d. $x = \frac{1}{3}$

e. $x = -\frac{5}{7}$

ANSWER: a
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 2.1.35
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True

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Section 1.2 - Linear Equations in One Variable

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58. Solve:

$$\frac{1}{x+6}+\frac{2}{x+7}=\frac{3}{x^2+13x+42}$$

a. $x=-\frac{10}{3}$

b. $x=\frac{13}{3}$

c. $x=\frac{2}{3}$

d. $x=-\frac{16}{3}$

e. $x=-\frac{4}{3}$

ANSWER: d
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 2.1.39
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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59. Solve for x:

$$\frac{14}{3}x-ax=7\left(\frac{2}{3}x-1\right)+b$$

a. $x=\frac{7-a}{b}$

b. $x=\frac{b-7}{a}$

c. $x=\frac{7-b}{a}$

d. $x=\frac{a-b}{7}$

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e. $x = \frac{b-a}{7}$

ANSWER: c
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 2.1.45
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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Section 1.3 - Modeling with Linear Equations

1. Select a verbal description of the algebraic expression without using the variable.

$x + 5$

a. A number divided by 5
b. A number decreased by 5
c. A number increased by 5
d. A number multiply by 5
e. None of the above

ANSWER: c
POINTS: 1
REFERENCES: 1.3.9
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
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2. Select a verbal description of the algebraic expression without using the variable.

$t - 5$

a. A number increased by 5
b. A number decreased by 5
c. A number divided by 5
d. A number multiply by 5
e. None of the above

ANSWER: b
POINTS: 1
REFERENCES: 1.3.10
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 9/19/2014 8:21 AM

3. Select a verbal description of the algebraic expression without using the variable.

$\frac{u}{6}$

a. A number multiply by 6
b. A number divided by 6
c. A number decreased by 6
d. A number increased by 6
e. None of the above

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Section 1.3 - Modeling with Linear Equations

ANSWER: b
POINTS: 1
REFERENCES: 1.3.11
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
DATE MODIFIED: 9/19/2014 8:22 AM

4. Select a verbal description of the algebraic expression without using the variable.

$$\frac{y-2}{7}$$

a. A number increased by 7 is divided by 2.
b. A number divided by 7 is increased by 7.
c. A number decreased by 7 is divided by 2.
d. A number increased by 2 is divided by 7.
e. A number decreased by 2 is divided by 7.

ANSWER: e
POINTS: 1
REFERENCES: 1.3.13
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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5. Select a verbal description of the algebraic expression without using the variable.

$-9(b+5)$

a. Positive 5 is multiplied by a number increased by 9.
b. Positive 9 is multiplied by a number increased by 5.
c. Positive 5 is multiplied by a number decreased by 9.
d. Negative 9 is multiplied by a number increased by 5.
e. Negative 5 is multiplied by a number decreased by 9.

ANSWER: d
POINTS: 1
REFERENCES: 1.3.15
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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Section 1.3 - Modeling with Linear Equations

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6. Select a verbal description of the algebraic expression without using the variable.

$$\frac{6(p-5)}{p}$$

a. 5 is multiplied by a number decreased by 6 and the product is divided by that number.
b. A number increased by 5 and divided by that number.
c. 5 is multiplied by a number increased by 6 and the product is divided by that number.
d. 6 is multiplied by a number decreased by 5 and the product is divided by that number.
e. 6 is multiplied by a number increased by 5 and the product is divided by that number.

ANSWER: d
POINTS: 1
REFERENCES: 1.3.17
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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7. Select a verbal description of the algebraic expression without using the variable.

$14x(x-4)$

a. 4 is multiplied by a number and that product is multiplied by the number increased by 14.
b. 14 is multiplied by a number and that product is multiplied by the number decreased by 4.
c. 4 is multiplied by a number and that product is multiplied by the number decreased by 14.
d. 14 is multiplied by a number and that product is multiplied by the number increased by 4.
e. None of the above

ANSWER: b
POINTS: 1
REFERENCES: 1.3.16
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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8. Select a verbal description of the algebraic expression without using the variable.

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$\frac{z+16}{5}$

a. A number decreased by 5 is divided by 16.
b. A number decreased by 16 is divided by 5.
c. A number increased by 5 is divided by 16.
d. A number increased by 5 is divided by 5.
e. None of the above

ANSWER: d
POINTS: 1
REFERENCES: 1.3.14
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
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9. Solve the following percent equation.

What is 150% of 360?

a. 539
b. 541
c. 542
d. 540
e. 538

ANSWER: d
POINTS: 1
REFERENCES: 1.3.44
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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10. Select an algebraic expression for the verbal description.

The distance traveled in t hours by a car traveling at 52 miles per hour.

a. $52t$
b. $\frac{t}{52}$
c. t
d. 52

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e. $\frac{52}{t}$

ANSWER: a
POINTS: 1
REFERENCES: 1.3.23
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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11. Select an algebraic expression for the verbal description.

The travel time for a plane traveling at a rate of r kilometers per hour for 600 kilometers.

a. $600 - r$
b. $600r$
c. $\frac{600}{r}$
d. $\frac{r}{600}$
e. $600 + r$

ANSWER: c
POINTS: 1
REFERENCES: 1.3.24
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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12. Select an algebraic expression for the verbal description.

The amount of acid in x liters of a 40% acid solution.

a. $\frac{40}{x}$
b. $40x$
c. $0.40x$
d. $\frac{0.40}{x}$
e. $\frac{x}{0.40}$

ANSWER: c
POINTS: 1

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Section 1.3 - Modeling with Linear Equations

REFERENCES: 1.3.25
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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13. Select an algebraic expression for the verbal description.

The perimeter of a rectangle with a width x and a length that is two times the width.

a. $2x$
b. $4x$
c. $6x$
d. $7x$
e. $11x$

ANSWER: c
POINTS: 1
REFERENCES: 1.3.27
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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14. Select an algebraic expression for the verbal description.

The area of a triangle with base 16 inches and height h inches.

a. $9h$
b. $32h$
c. $8h$
d. $64h$
e. $16h$

ANSWER: c
POINTS: 1
REFERENCES: 1.3.28
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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15. Select an algebraic expression for the verbal description.

The total cost of producing x units for which the fixed costs are $2,400 and the cost per unit is $10.

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a. $2{,}400 + 10x$
b. $10x + 2{,}400x$
c. $10 + 2{,}400x$
d. $2{,}400 - 10x$
e. $10x - 2{,}400x$

ANSWER: a
POINTS: 1
REFERENCES: 1.3.29
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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16. Translate the following statement into an algebraic expression or equation.

Twenty percent of the list price L.

a. $\frac{L}{20}$
b. $0.2\,L$
c. $\frac{20}{L}$
d. $\frac{0.2}{L}$
e. 0.2

ANSWER: b
POINTS: 1
REFERENCES: 1.3.31
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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17. Translate the following statement into an algebraic expression or equation.

The percent function p of 674 that is represented by the number N.

a. $N = p(674)$
b. $N = 674$
c. $p = N(674)$

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d. $N = \frac{p}{(674)}$

e. None of the above

ANSWER: a
POINTS: 1
REFERENCES: 1.3.33
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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18. Select a mathematical model for the following problem and solve.

The sum of two consecutive natural numbers is 527. Find the numbers.

a. 267, 268
b. 265, 266
c. 269, 270
d. 263, 264
e. 271, 272

ANSWER: d
POINTS: 1
REFERENCES: 1.3.37
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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19. Select a mathematical model for the following problem and solve.

One positive number is 7 times another number. The difference between the two numbers is 156. Find the numbers.

a. 49, 107
b. 26, 182
c. 20, 176
d. 50, 106
e. 30, 126

ANSWER: b
POINTS: 1
REFERENCES: 1.3.39
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True

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Section 1.3 - Modeling with Linear Equations

STUDENT ENTRY MODE: Basic
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20. Solve the following percent equation.

What is 10% of 49?

a. 5.9
b. 4.9
c. 2.9
d. 3.9
e. 6.9

ANSWER: b
POINTS: 1
REFERENCES: 1.3.43
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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21. Solve the following percent equation.

460 is what percent of 2,000? (Round the answer to unit digit if necessary.)

a. 23%
b. 24%
c. 21%
d. 25%
e. 22%

ANSWER: a
POINTS: 1
REFERENCES: 1.3.45
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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22. Solve the following percent equation.

14 is $\frac{1}{4}$% of what number?

a. 5,700

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b. 5,400
c. 5,600
d. 5,500
e. 5,800

ANSWER: c
POINTS: 1
REFERENCES: 1.3.47
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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23. The price of a swimming pool has been discounted 12.5%. The sale price is $1,270.75. Find the original list price of the pool. (Round the answer to the nearest cent.)

a. $1,454.29
b. $1,455.29
c. $1,449.29
d. $1,452.29
e. $1,457.29

ANSWER: d
POINTS: 1
REFERENCES: 1.3.50
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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24. A family has annual loan payments equaling 40% of their annual income. During the year, their loan payments total $13,125.50. What is their annual income? (Round the answer to the nearest cent.)

a. $32,913.75
b. $32,713.75
c. $33,013.75
d. $32,813.75
e. $32,613.75

ANSWER: d
POINTS: 1
REFERENCES: 1.3.51
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic

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Section 1.3 - Modeling with Linear Equations

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25. The price of an item is given for 2000 and 2007. Find the percent change for the item. (Round the answer to one decimal place.)

Item	2000	2007
Gallon of regular unleaded Gasoline	$1.57	$2.3

a. 46.5% decrease
b. 46.5% increase
c. 45.5% increase
d. 47.5% decrease
e. 48.5% increase

ANSWER: b
POINTS: 1
REFERENCES: 1.3.53
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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26. The price of an item is given for 2000 and 2007. Find the percent change for the item. (Round the answer to one decimal place.)

Item	2000	2007
Pound of 100% ground beef	$1.61	$2.25

a. 38.8% decrease
b. 40.8% increase
c. 39.8% decrease
d. 41.8% increase
e. 39.8% increase

ANSWER: e
POINTS: 1
REFERENCES: 1.3.55
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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27. The price of item is given for 2000 and 2007. Find the percent change for the item. (Round the answer to one decimal place.)

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Item	2000	2007
Monthly bill for cellular phone service	$43.27	$49.79

a. 17.1% decrease
b. 15.1% decrease
c. 16.1% increase
d. 15.1% increase
e. 14.1% increase

ANSWER: d
POINTS: 1
REFERENCES: 1.3.56
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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28. A room is 2.5 times as long as it is wide, and its perimeter is 15 meters. Write the length l in terms of the width w and write an equation for the perimeter in terms of w.

a. $l = 7w;\ p = 2.5w$
b. $l = 9w;\ p = 7w$
c. $l = 7w;\ p = 1.7w$
d. $l = \frac{w}{2.5};\ p = \frac{w}{7}$
e. $l = 2.5w;\ p = 7w$

ANSWER: e
POINTS: 1
REFERENCES: 1.3.57
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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29. To get an A in a course, you must have an average of at least 70 on four tests of 100 points each. The scores on your first three tests were 89, 92, and 84. What must you score on the fourth test to get an A for the course? Find the minimum possible value.

a. 14
b. 16
c. 17
d. 13
e. 15

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Section 1.3 - Modeling with Linear Equations

ANSWER: e
POINTS: 1
REFERENCES: 1.3.59
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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30. You are taking a course that has four tests. The first three tests are 100 points each and the fourth test is 200 points. To get an A in the course, you must have an average of at least 90% on the four tests. Your scores on the first three tests were 88, 92, and 82. What must you score on the fourth test to get an A for the course? Find the minimum possible value.

a. 187
b. 188
c. 190
d. 186
e. 189

ANSWER: b
POINTS: 1
REFERENCES: 1.3.60
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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31. Students are traveling in two cars to a football game 135 miles away. The first car leaves on time and travels at an average speed of 42 miles per hour. The second car starts $\frac{1}{2}$ hour later and travels at an average speed of 55 miles per hour. How long will it take the second car to catch up to the first car? Round the answer to two decimal places.

a. 0.47 hours after the first car leaves.
b. 3.12 hours after the first car leaves.
c. 2.12 hours after the first car leaves.
d. 4.12 hours after the first car leaves.
e. 6.12 hours after the first car leaves.

ANSWER: c
POINTS: 1
REFERENCES: 1.3.62
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True

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Section 1.3 - Modeling with Linear Equations

STUDENT ENTRY MODE: Basic
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32. A truck driver traveled at an average speed of 65 miles per hour on a 100-mile trip to pick up a load of freight. On the return trip (with the truck fully loaded), the average speed was 60 miles per hour. What was the average speed for the round trip? Round the answer to one decimal place.

a. About 63.4 mi/h
b. About 60.4 mi/h
c. About 64.4 mi/h
d. About 62.4 mi/h
e. About 61.4 mi/h

ANSWER: d
POINTS: 1
REFERENCES: 1.3.63
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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33. An executive flew in the corporate jet to a meeting in a city 1,200 kilometers away. After traveling the same amount of time on the return flight, the pilot mentioned that they still had 500 kilometers to go. The air speed of the plane was 600 kilometers per hour. How fast was the wind blowing? (Assume that the wind direction was parallel to the flight path and constant all day.)

a. $\frac{7}{3000}$ km/h
b. $2\frac{5}{7}$ km/h
c. $157\frac{17}{19}$ km/h
d. $428\frac{4}{7}$ km/h
e. $\frac{19}{3000}$ km/h

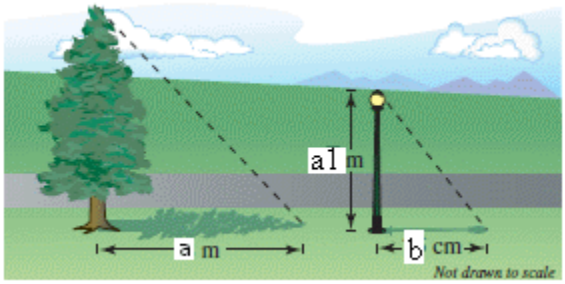
ANSWER: c
POINTS: 1
REFERENCES: 1.3.64
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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Section 1.3 - Modeling with Linear Equations

34. To obtain the height of a tree (see figure), you measure the tree's shadow and find that it is 2 meters long. You also measure the shadow of a five-meter lamppost and find that it is 73 centimeters long. How tall is the tree?



a. $\frac{73}{1000}$ m

b. $\frac{2}{73}$ m

c. $\frac{73}{500}$ m

d. $13\frac{51}{73}$ m

e. $6\frac{62}{73}$ m

ANSWER: d
POINTS: 1
REFERENCES: 1.3.68
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
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35. A nursery has $50,000 of inventory in dogwood trees and red maple trees. The profit on a dogwood tree is 23% and the profit on a red maple tree is 10%. The profit for the entire stock is 17%. How much was invested in each type of tree?

a. Red maple: $23,277; Dogwood: $26,923
b. Red maple: $23,077; Dogwood: $27,123
c. Red maple: $23,077; Dogwood: $26,923
d. Red maple: $23,077; Dogwood: $23,277
e. Red maple: $27,123; Dogwood: $26,923

ANSWER: c
POINTS: 1
REFERENCES: 1.3.73
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic

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Section 1.3 - Modeling with Linear Equations

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36. Solve the following percent equation.

476 is what percent of 350?

a. 136%
b. 135%
c. 137%
d. 134%
e. 138%

ANSWER: a
POINTS: 1
REFERENCES: 1.3.46
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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37. A 100% concentrate is to be mixed with a mixture having a concentration of 42% to obtain 54 gallons of a mixture with a concentration of 75%. How much of the 100% concentrate will be needed?

a. About 29.7 gal
b. About 32.7 gal
c. About 28.7 gal
d. About 31.7 gal
e. About 30.7 gal

ANSWER: e
POINTS: 1
REFERENCES: 1.3.76
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
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38. A forester mixes gasoline and oil to make 2 gallons of mixture for his two-cycle chainsaw engine. This mixture is 31 parts gasoline and 1 part two-cycle oil. How much gasoline must be added to bring the mixture to 45 parts gasoline and 1 part oil?

a. About 1.08 gal
b. About 0.88 gal
c. About 1.18 gal

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d. About 0.98 gal
e. About 1.28 gal

ANSWER: b
POINTS: 1
REFERENCES: 1.3.77
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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39. A grocer mixes peanuts that cost $4.49 per pound and walnuts that cost $5.69 per pound to make 100 pounds of a mixture that costs $5.21 per pound. How much of each kind of nut is put into the mixture?

a. 40 lb of peanuts, 40 lb of walnuts
b. 60 lb of peanuts, 60 lb of walnuts
c. 50 lb of peanuts, 60 lb of walnuts
d. 40 lb of peanuts, 60 lb of walnuts
e. 60 lb of peanuts, 40 lb of walnuts

ANSWER: d
POINTS: 1
REFERENCES: 1.3.78
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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40. An outdoor furniture manufacturer has fixed costs of $10,000 per month and average variable costs of $16.75 per unit manufactured. The company has $170,000 available to cover the monthly costs. How many units can the company manufacture? (*Fixed costs* are those that occur regardless of the level of production. *Variable costs* depend on the level of production.) (Round the answer to unit digit.)

a. 9,562 units
b. 9,572 units
c. 9,542 units
d. 9,552 units
e. 9,532 units

ANSWER: d
POINTS: 1
REFERENCES: 1.3.79
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic

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Section 1.3 - Modeling with Linear Equations

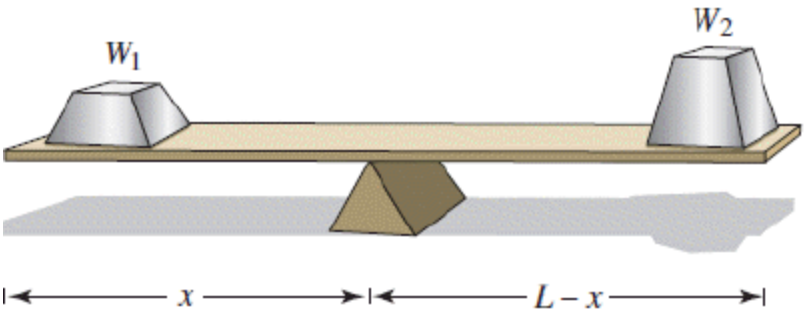
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41. A plumbing supply company has fixed costs of $30,000 per month and average variable costs of $9.5 per unit manufactured. The company has $60,000 available to cover the monthly costs. How many units can the company manufacture? (*Fixed costs* are those that occur regardless of the level of production. *Variable costs* depend on the level of production.) (Round the answer to unit digit.)

a. 3,178 units
b. 3,188 units
c. 3,158 units
d. 3,168 units
e. 3,198 units

ANSWER: c
POINTS: 1
REFERENCES: 1.3.80
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
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42. You have a uniform beam of length L with a fulcrum x feet from one end (see figure). Objects with weights W_1 and W_2 are placed at opposite ends of the beam. The beam will balance when $W_1x = W_2(L - x)$. Find x such that the beam will balance.



Two children weighing $W_1 = 28$ pounds and $W_2 = 56$ pounds are playing on a seesaw that is 30 feet long. (Round the answer to unit digit.)

a. $x = 22$ feet from the 28 pounds child
b. $x = 23$ feet from the 28 pounds child
c. $x = 21$ feet from the 56 pounds child
d. $x = 20$ feet from the 28 pounds child
e. $x = 19$ feet from the 28 pounds child

ANSWER: d
POINTS: 1

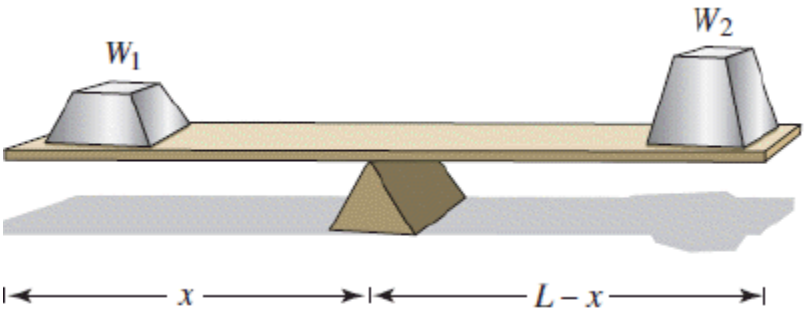
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Section 1.3 - Modeling with Linear Equations

REFERENCES: 1.3.93
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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43. You have a uniform beam of length L with a fulcrum x feet from one end (see figure). Objects with weights W_1 and W_2 are placed at opposite ends of the beam. The beam will balance when $W_1x = W_2(L - x)$. Find x such that the beam will balance.



A person weighing $W_1 = 210$ pounds is attempting to move a rock weighing $W_2 = 740$ pounds with a bar that is 6 feet long.

a. $x = \frac{21}{95}$ feet from the person
b. $x = 4\frac{64}{95}$ feet from the person
c. $x = \frac{1}{950}$ feet from the person
d. $x = \frac{74}{95}$ feet from the person
e. $x = 740$ feet from the person

ANSWER: b
POINTS: 1
REFERENCES: 1.3.94
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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44. A billiard ball has a volume of 5.95 cubic inches. Find the radius of a billiard ball.

a. $\sqrt{\frac{4.46}{\pi}} \approx 1.19$ in

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b. $\sqrt[3]{\frac{\pi}{4.46}} \approx 0.70$ in

c. $\sqrt[3]{\frac{\pi}{4.46}} \approx 1.12$ in

d. $\sqrt[3]{\frac{4.46}{\pi}} \approx 1.19$ in

e. $\sqrt[3]{\frac{4.46}{\pi}} \approx 1.12$ in

ANSWER: e
POINTS: 1
REFERENCES: 1.3.95
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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45. The diameter of a cylindrical propane gas tank is 8 feet. The total volume of the tank is 603.6 cubic feet. Find the length of the tank. (Round the answer to tens digit.)

a. $\frac{16\pi}{603.6} \approx 0.08$ ft

b. $\frac{603.6}{16\pi} \approx 12$ ft

c. $\frac{603.6}{4\pi} \approx 48$ ft

d. $\frac{16\pi}{603.6} \approx 12$ ft

e. $\frac{603.6}{16\pi} \approx 0.08$ ft

ANSWER: b
POINTS: 1
REFERENCES: 1.3.96
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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Section 1.3 - Modeling with Linear Equations

46. The average daily temperature in San Diego, California is 62.1°F. What is San Diego's average daily temperature in degrees Celsius? (Round the answer to unit digit.)

$$t_C = \frac{5}{9}(t_F - 32)$$

a. 19°C
b. 17°C
c. 18°C
d. 16°C
e. 15°C

ANSWER: b
POINTS: 1
REFERENCES: 1.3.97
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
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47. The average daily temperature in Duluth, Minnesota is 38.1°F. What is Duluth's average daily temperature in degrees Celsius? (Round the answer to unit digit.)

$$t_C = \frac{5}{9}(t_F - 32)$$

a. 7°C
b. 4°C
c. 6°C
d. 5°C
e. 3°C

ANSWER: e
POINTS: 1
REFERENCES: 1.3.98
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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48. Solve the following percent equation.

66 is 40% of what number?

a. 240

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b. 190
c. 215
d. 265
e. 165

ANSWER: e
POINTS: 1
REFERENCES: 1.3.48
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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49. Translate the following statement into an algebraic expression or equation.

The amount of water in q quarts of a liquid that is 31% water.

a. $31q$
b. $0.31 + q$
c. $\frac{0.31}{q}$
d. $0.31 - q$
e. $0.31q$

ANSWER: e
POINTS: 1
REFERENCES: 1.3.32
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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50. Determine whether the statement is true or false. Justify your answer.

"4 less than z cubed divided by the difference of z squared and 7" can be written as $(z^3 - 4)/(z - 7)^2$.

a. False. The expression should be $\frac{z^3 - 4}{z^2 - 7}$.
b. True. The expression should be $\frac{z^3 - 4}{(z - 7)^2}$.

ANSWER: a
POINTS: 1
REFERENCES: 1.3.101

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Section 1.3 - Modeling with Linear Equations

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Section 1.4 - Quadratic Equations and Applications

1. Write the following quadratic equation in general form.

$-8x^2 = 15 + 3x$

a. $-8x^2 - 3x = 15$

b. $8x^2 + 3x + 15 = 0$

c. $3x - 8x^2 + 15 = 0$

d. $15 - 8x^2 + 3x = 0$

e. $-8x^2 + 15 + 3x = 0$

ANSWER: b
POINTS: 1
REFERENCES: 1.4.7
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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2. Write the quadratic equation in general form.

$4x^2 = 8 - 8x$

a. $4x^2 + 8x = -8$

b. $4x^2 - 8x - 8 = 0$

c. $4x^2 + 8x + 8 = 0$

d. $-4x^2 + 8x - 8 = 0$

e. $4x^2 + 8x - 8 = 0$

ANSWER: e
POINTS: 1
REFERENCES: 1.4.7
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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3. Write the quadratic equation in general form.

$3x^2 = 26x$

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a. $3x^2 - 26 = 0$

b. $3x^2 + 26 = 0$

c. $3x^2 - 26x = 0$

d. $3x^2 + 26x = 0$

e. $-3x^2 - 26x = 0$

ANSWER: c
POINTS: 1
REFERENCES: 1.4.8
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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4. Write the following quadratic equation in general form.

$5(x^2 - 10) = -9x$

a. $5x^2 - 50 + 9x = 0$

b. $5(x^2 - 10) + 9x = 0$

c. $5x^2 - 50 = -9x$

d. $5x^2 + 9x = 50$

e. $5x^2 + 9x - 50 = 0$

ANSWER: e
POINTS: 1
REFERENCES: 1.4.9
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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5. Write the quadratic equation in general form.

$(x - 3)^2 = 3$

a. $x^2 - 6x - 6 = 0$

b. $x^2 - 6x + 6 = 0$

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c. $x^2 - 6x = -3$

d. $x^2 - 6x + 9 = 0$

e. $x^2 + 6x + 6 = 0$

ANSWER: b
POINTS: 1
REFERENCES: 1.4.9
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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6. Write the following quadratic equation in general form.

$x(x + 7) = x - 10$

a. $x^2 + 6x - 10 = 0$

b. $x^2 + 6x + 10 = 0$

c. $x^2 - 6x + 10 = 0$

d. $x^2 + 6x = -10$

e. $x^2 + 7x = -10$

ANSWER: b
POINTS: 1
REFERENCES: 1.4.12
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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7. Write the quadratic equation in general form.

$x(x + 2) = 3x^2 + 6$

a. $2x^2 - 2x - 6 = 0$

b. $-2x^2 - 2x + 6 = 0$

c. $2x^2 + 2x + 6 = 0$

d. $2x^2 + 2x - 6 = 0$

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e. $2x^2 - 2x + 6 = 0$

ANSWER: e
POINTS: 1
REFERENCES: 1.4.12
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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8. Solve the quadratic equation by factoring.

$28x^2 + 7x = 0$

a. 0, 4
b. $1, -\frac{1}{4}$
c. $0, -4$
d. $0, \frac{1}{4}$
e. $0, -\frac{1}{4}$

ANSWER: e
POINTS: 1
REFERENCES: 1.4.13
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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9. Solve the quadratic equation by factoring.

$16x^2 - 1 = 0$

a. $0, -\frac{1}{4}$
b. $\frac{1}{4}, \frac{1}{4}$
c. $0, \frac{1}{4}$

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d. $1, -\frac{1}{4}$

e. $-\frac{1}{4}, \frac{1}{4}$

ANSWER: e
POINTS: 1
REFERENCES: 1.4.14
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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10. Solve the quadratic equation by factoring.

$x^2 - 10x + 21 = 0$

a. -3, 7
b. 10, 7
c. 3, 7
d. -3, -7
e. 3, -7

ANSWER: c
POINTS: 1
REFERENCES: 1.4.16
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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11. Solve the quadratic equation by factoring.

$x^2 + 10x + 25 = 0$

a. ± 5
b. 5
c. -5
d. $\frac{1}{5}$
e. $-\frac{1}{5}$

ANSWER: c

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Section 1.4 - Quadratic Equations and Applications

POINTS: 1
REFERENCES: 1.4.17
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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12. Solve the following quadratic equation by factoring.

$-5x^2-24x+36=0$

a. $x=-5, x=-6$
b. $x=\frac{6}{5}, x=6$
c. $x=-\frac{6}{5}, x=-6$
d. $x=-\frac{6}{5}, x=6$
e. $x=\frac{6}{5}, x=-6$

ANSWER: e
POINTS: 1
REFERENCES: 1.4.18
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 9/24/2014 1:23 AM
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13. Solve the quadratic equation by factoring.

$x^2+4x=21$

a. 3, 7
b. -3, -7
c. 3, -7
d. -3, 7
e. 1, -7

ANSWER: c
POINTS: 1
REFERENCES: 1.4.21
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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Section 1.4 - Quadratic Equations and Applications

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14. Solve the quadratic equation by factoring.

$-x^2 + 8x = 12$

a. -2, 6
b. 8, 12
c. -2, -6
d. 2, -6
e. 2, 6

ANSWER: e
POINTS: 1
REFERENCES: 1.4.22
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:15 PM
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15. Solve the quadratic equation by factoring.

$\frac{1}{7}x^2 - x - 14 = 0$

a. -7, -14
b. 7, -14
c. 7, 14
d. -7, 14
e. -7, 7

ANSWER: d
POINTS: 1
REFERENCES: 1.4.24
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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16. Solve the equation by extracting square roots.

$x^2 = 64$

a. $\pm\frac{1}{8}$

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b. -8
c. ± 8
d. $\pm 8x$
e. 8

ANSWER: c
POINTS: 1
REFERENCES: 1.4.25
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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17. Solve the equation by extracting square roots.

$x^2 = 17$

a. $\pm\sqrt{17}x^2$
b. $\pm\sqrt{17}$
c. 17
d. $\pm\dfrac{\sqrt{17}}{x}$
e. $\pm\sqrt{17}x$

ANSWER: b
POINTS: 1
REFERENCES: 1.4.27
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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18. Solve the equation by extracting square roots.

$x^2 = 490$

a. $7\sqrt{10}x$
b. $\pm 7\sqrt{10}$
c. $\sqrt{5}$
d. $\sqrt{7}$
e. $7\sqrt{10}$

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ANSWER: b
POINTS: 1
REFERENCES: 1.4.28
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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19. Solve the equation by extracting square roots.

$9x^2 = 100$

a. $x = \frac{100}{3}, x = -\frac{100}{3}$

b. $x = \frac{100}{9}$

c. $x = \frac{10}{9}, x = -\frac{10}{9}$

d. $x = \frac{10}{3}$

e. $x = \frac{10}{3}, x = -\frac{10}{3}$

ANSWER: e
POINTS: 1
REFERENCES: 1.4.29
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 9/24/2014 3:20 AM
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20. Solve the equation by extracting square roots.

$4x^2 = 108$

a. $\pm\sqrt{3}$

b. $3\sqrt{3}$

c. $\pm 3\sqrt{3}x$

d. $\pm\sqrt{3}x$

e. $\pm 3\sqrt{3}$

ANSWER: e
POINTS: 1
REFERENCES: 1.4.29
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True

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Section 1.4 - Quadratic Equations and Applications

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21. Solve the equation by extracting square roots.

$4x^2 = 144$

a. $\pm\sqrt{6}$
b. ± 6
c. $\pm\sqrt{6}x$
d. $\pm 6x$
e. 6

ANSWER: b
POINTS: 1
REFERENCES: 1.4.30
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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22. Solve the equation by extracting square roots.

$(x+6)^2 = 3$

a. $6+\sqrt{3}$
b. $-6+\sqrt{3}$
c. $-6-\sqrt{3}$
d. $6\pm\sqrt{3}$
e. $-6\pm\sqrt{3}$

ANSWER: e
POINTS: 1
REFERENCES: 1.4.33
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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23. Solve the equation $(4x+3)^2 = 19$ by extracting square roots.

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a. $x = \frac{-3+\sqrt{19}}{4}, \frac{-3-\sqrt{19}}{4}$

b. $x = 4, -\frac{11}{2}$

c. $x = \frac{3+\sqrt{19}}{4}, \frac{3-\sqrt{19}}{4}$

d. $x = \frac{-3+\sqrt{19}}{4}$

e. $x = 4$

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 9/24/2014 4:31 AM
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24. Solve the equation by extracting square roots.

$(x+3)^2 = 512$

a. $3 \pm 16\sqrt{2}$
b. $-3 + 16\sqrt{2}$
c. $-3 \pm 16\sqrt{2}$
d. $-3 \pm \sqrt{8}$
e. $-3 - 16\sqrt{2}$

ANSWER: c
POINTS: 1
REFERENCES: 1.4.34
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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25. Solve the equation by extracting square roots.

$(x-11)^2 = (x+3)^2$

a. 2
b. -4
c. -2

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d. $4x$

e. 4

ANSWER: e
POINTS: 1
REFERENCES: 1.4.37
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:16 PM
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26. Solve the equation by extracting square roots.

$(x+6)^2 = (x+3)^2$

a. $x = 1$

b. $x = -\frac{3}{2}$

c. $x = -\frac{9}{2}$

d. $x = -\frac{3}{2}, \frac{9}{2}$

e. No solution

ANSWER: c
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 9/24/2014 5:27 AM
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27. Solve the quadratic equation by completing the square.

$x^2 + 3x - 18 = 0$

a. -6, -3

b. 6, 3

c. -6, 3

d. 6, 3

e. 18, -3

ANSWER: c
POINTS: 1
REFERENCES: 1.4.39
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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Section 1.4 - Quadratic Equations and Applications

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28. Solve the following quadratic equation by completing the square.

$x^2 - 20x + 36 = 0$

a. $x = -2, x = -2$
b. $x = -2, x = 2$
c. $x = 2$
d. $x = 8, x = -8$
e. $x = 2, x = 18$

ANSWER: e
POINTS: 1
REFERENCES: 1.4.40
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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DATE MODIFIED: 10/23/2014 4:47 AM

29. Solve the quadratic equation by completing the square.

$x^2 - x - 12 = 0$

a. 4, -3
b. 4,
c. -4, -3
d. -4, 3
e. 4, 3

ANSWER: a
POINTS: 1
REFERENCES: 1.4.40
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:16 PM
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30. Solve the following quadratic equation by completing the square.

$16x^2 = 48x - 27$

a. $x = \frac{9}{4}$

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b. $x = -\frac{9}{4}$

c. $x = \frac{9}{4}, \frac{3}{4}$

d. $x = -\frac{9}{4}, -\frac{3}{4}$

e. $x = -8, -3$

ANSWER: c
POINTS: 1
REFERENCES: 1.4.43
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 9/24/2014 6:14 AM
DATE MODIFIED: 5/15/2015 3:06 AM

31. Rewrite the quadratic portion of the algebraic expression as the sum or difference of two squares by completing the square.

$$\frac{1}{x^2+2x+2}$$

a. $\frac{1}{(x+1)^2-1}$

b. $\frac{1}{(x-1)^2+1}$

c. $\frac{1}{(x+1)^2+1}$

d. $\frac{1}{(x-1)^2-1}$

e. $\frac{1}{(x+1)^2+2}$

ANSWER: c
POINTS: 1
REFERENCES: 1.4.49
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:16 PM
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32. Rewrite the quadratic portion of the algebraic expression as the sum or difference of two squares by completing the square.

$$\frac{1}{x^2-12x+24}$$

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a. $\frac{1}{(x+6)^2-12}$
b. $\frac{1}{(x+6)^2+12}$
c. $\frac{1}{(x-6)^2-12}$
d. $\frac{1}{(x-9)^2-12}$
e. $\frac{1}{(x+9)^2+12}$

ANSWER: c
POINTS: 1
REFERENCES: 1.4.50
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:16 PM
DATE MODIFIED: 5/15/2015 3:08 AM

33. Rewrite the quadratic portion of the algebraic expression as the sum or difference of two squares by completing the square.

$$\frac{3}{x^2+4x-2}$$

a. $\frac{6}{(x+4)^2-3}$
b. $\frac{3}{(x+2)^2-6}$
c. $\frac{3}{(x-2)^2+6}$
d. $\frac{3}{(x-2)^2-6}$
e. $\frac{3}{(x+2)^2+6}$

ANSWER: b
POINTS: 1
REFERENCES: 1.4.51
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:16 PM

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Section 1.4 - Quadratic Equations and Applications

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34. Rewrite the quadratic portion of the algebraic expression as the sum or difference of two squares by completing the square.

$$\frac{1}{\sqrt{10x-x^2}}$$

a. $\dfrac{1}{\sqrt{25+(x-5)^2}}$
b. $\dfrac{1}{\sqrt{25-(x-5)^2}}$
c. $\dfrac{1}{\sqrt{25-(x+5)^2}}$
d. $\dfrac{1}{\sqrt{5-(x-25)^2}}$
e. $\dfrac{1}{\sqrt{25+(x+5)^2}}$

ANSWER: b
POINTS: 1
REFERENCES: 1.4.55
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:16 PM
DATE MODIFIED: 10/23/2014 5:16 AM

35. Rewrite the quadratic portion of the algebraic expression as the sum or difference of two squares by completing the square.

$$\frac{7}{\sqrt{13-6x-x^2}}$$

a. $\dfrac{7}{\sqrt{22-(x+2)^2}}$
b. $\dfrac{7}{\sqrt{22-(x+3)^2}}$
c. $\dfrac{7}{\sqrt{22-(x-3)^2}}$
d. $\dfrac{7}{\sqrt{22+(x-3)^2}}$

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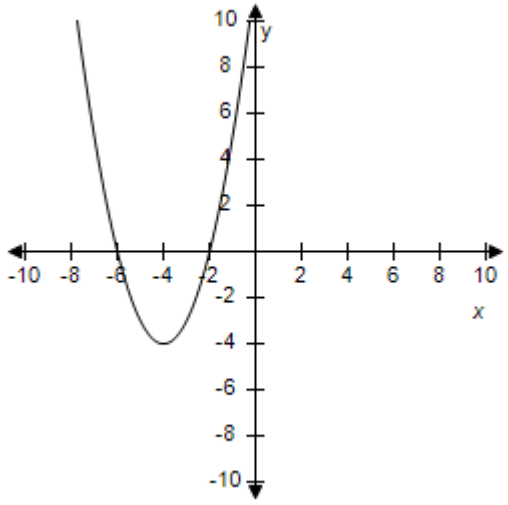
e. $\dfrac{7}{\sqrt{22+(x+3)^2}}$

ANSWER: b
POINTS: 1
REFERENCES: 1.4.56
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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36. Use a graphing utility to graph the equation. Use the graph to approximate any x-intercepts of the graph.

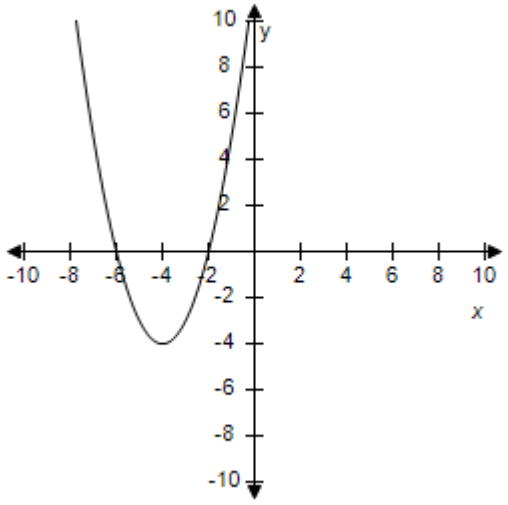
$y = (x+4)^2 - 4$

a.



$x = -2, -6$

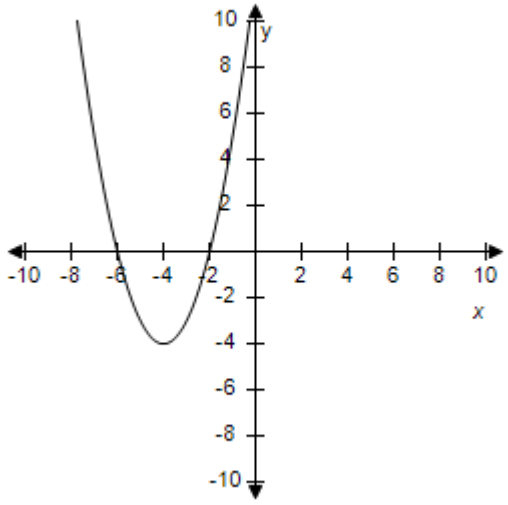
b.



$x = -2, -4$

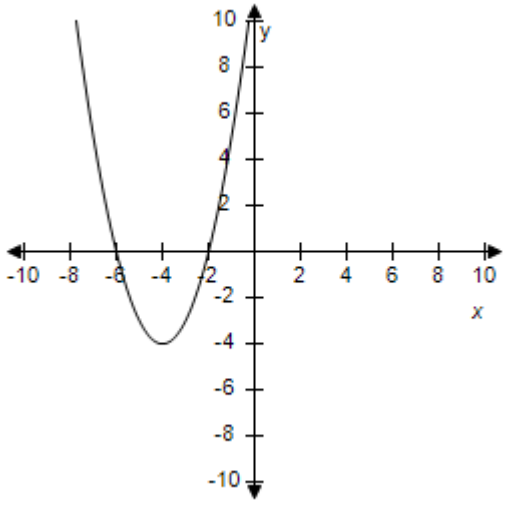
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c.



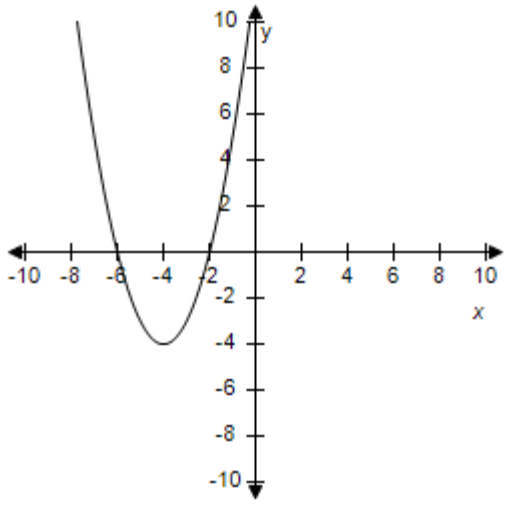
$x = -6, -4$

d.



$x = -4$

e.



$x = -2, -4, -6$

ANSWER: a
POINTS: 1
REFERENCES: 1.4.57
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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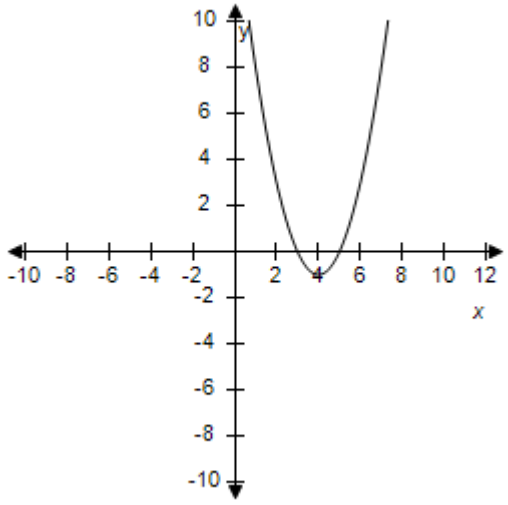
37. Use a graphing utility to graph the equation. Use the graph to approximate any x-intercepts of the graph.

$y = (x-4)^2 - 1$

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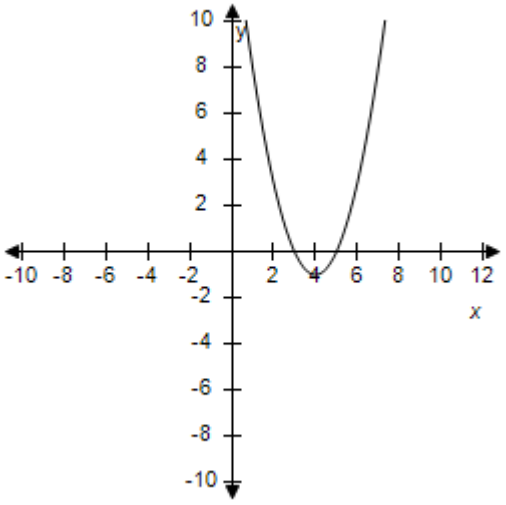
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a.



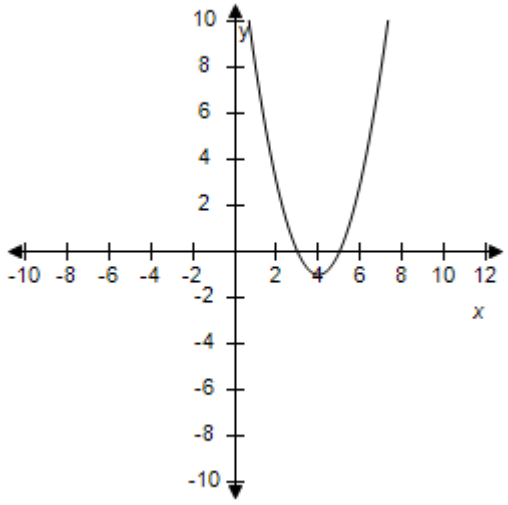
$x = 3, 5$

b.



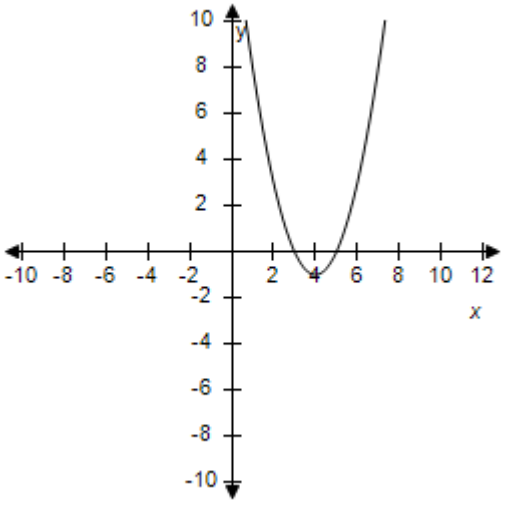
$x = 3, 4$

c.



$x = 4, 5$

d.

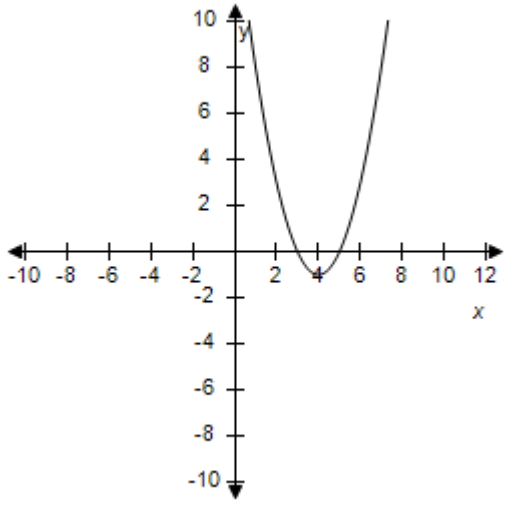


$x = 4$

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e.



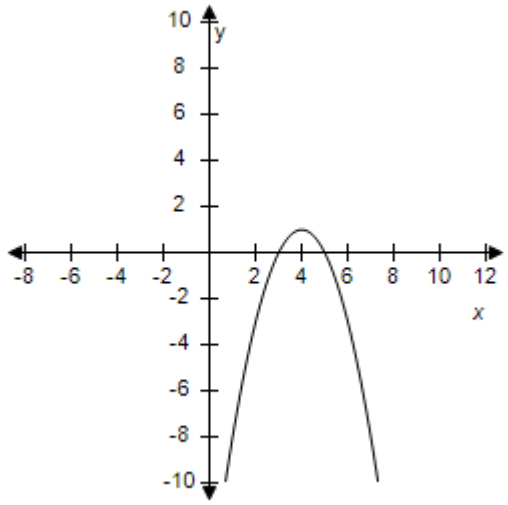
$x = 3, 4, 5$

ANSWER: a
POINTS: 1
REFERENCES: 1.4.58
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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38. Use a graphing utility to graph the equation. Use the graph to approximate any x-intercepts of the graph.

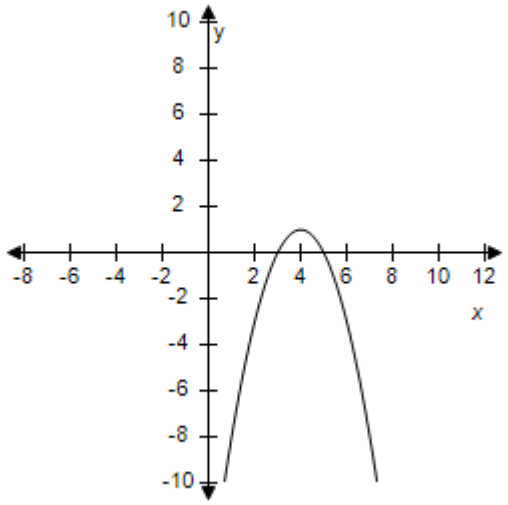
$y = 1 - (x - 4)^2$

a.



$x = 3, 4$

b.

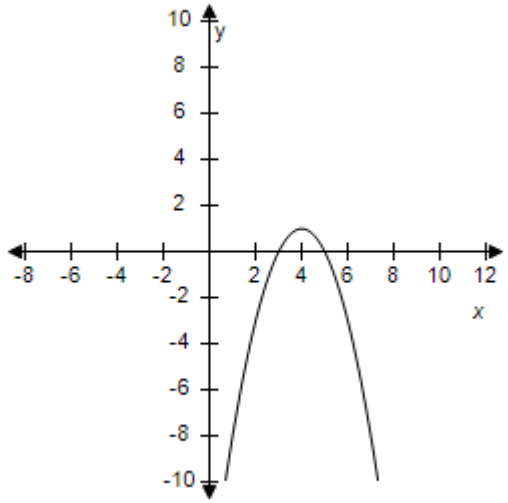


$x = 4, 5$

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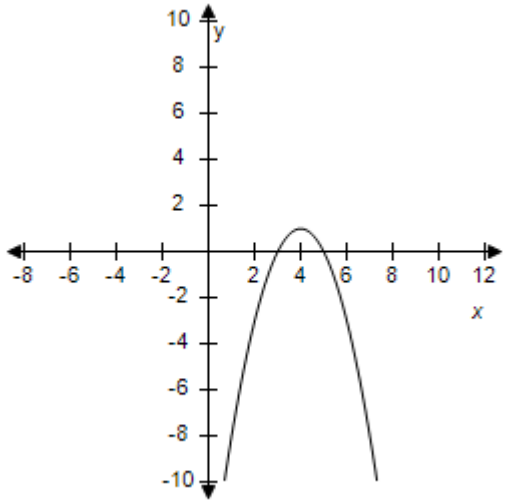
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c.



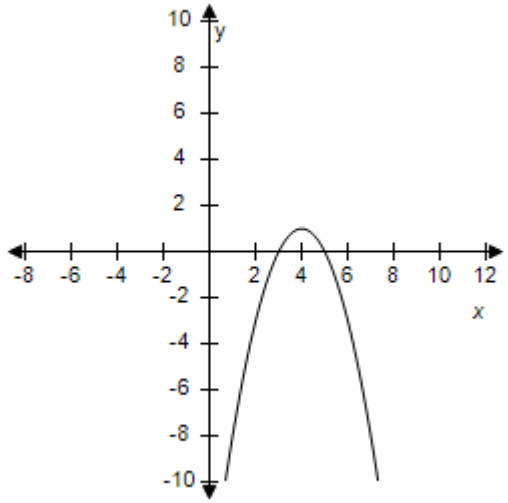
$x = 4$

d.



$x = 3, 5$

e.



$x = 3, 4, 5$

ANSWER: d
POINTS: 1
REFERENCES: 1.4.59
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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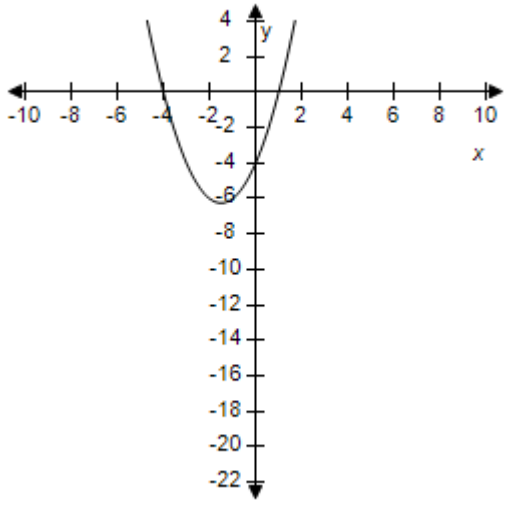
39. Use a graphing utility to graph the equation. Use the graph to approximate any x-intercepts of the graph.

$y = x^2 + 3x - 4$

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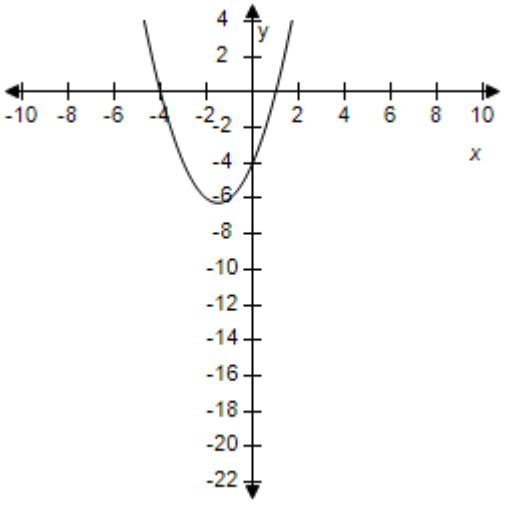
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a.



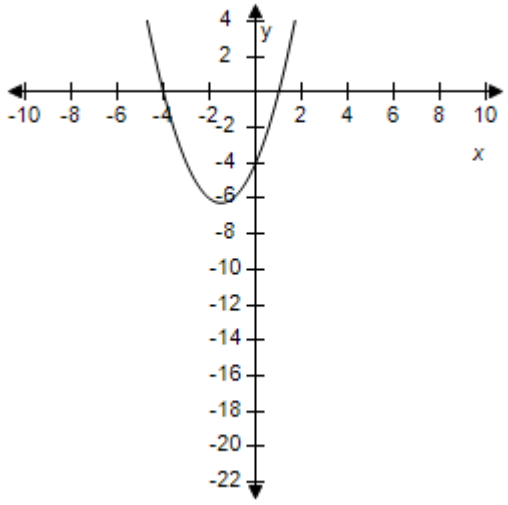
$x = 1, -4$

b.



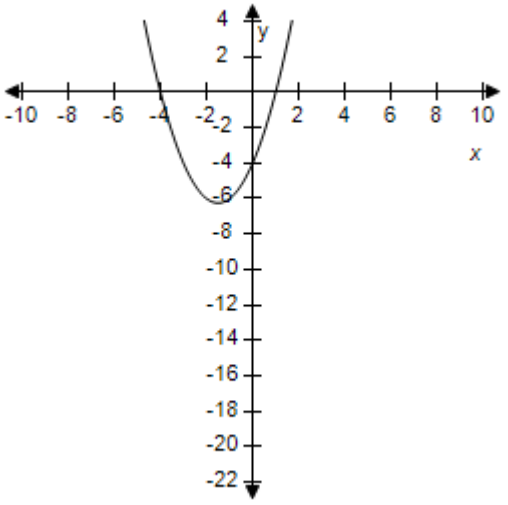
$x = -1.5$

c.



$x = 1, -1.5$

d.

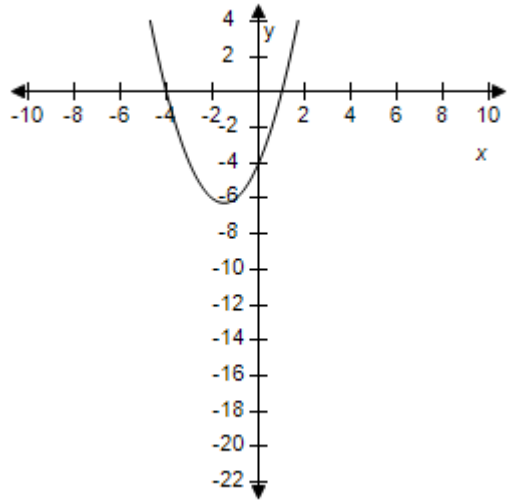


$x = -4, -1.5$

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e.



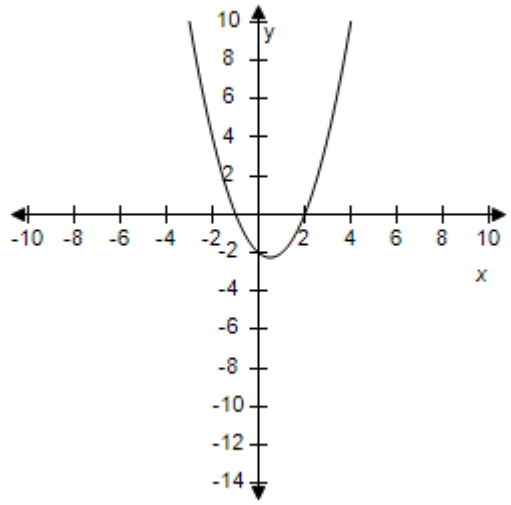
$x = -4, -1.5, 1$

ANSWER: a
POINTS: 1
REFERENCES: 1.4.63
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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40. Use a graphing utility to graph the equation. Use the graph to approximate any x-intercepts of the graph.

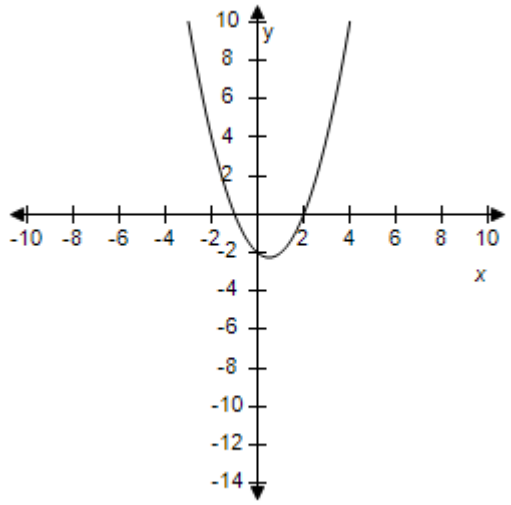
$y = x^2 - x - 2$

a.



$x = -1, 0.5, 2$

b.

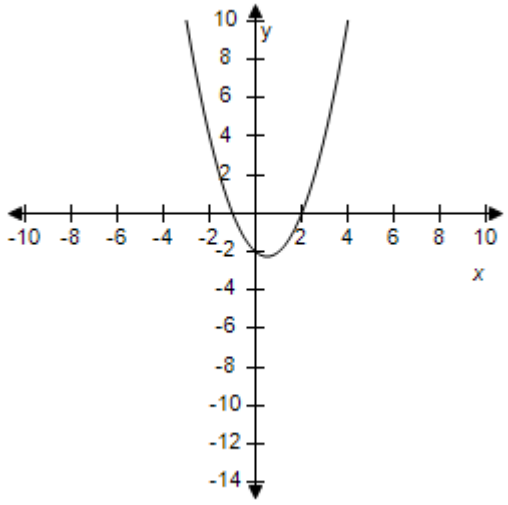


$x = 0.5$

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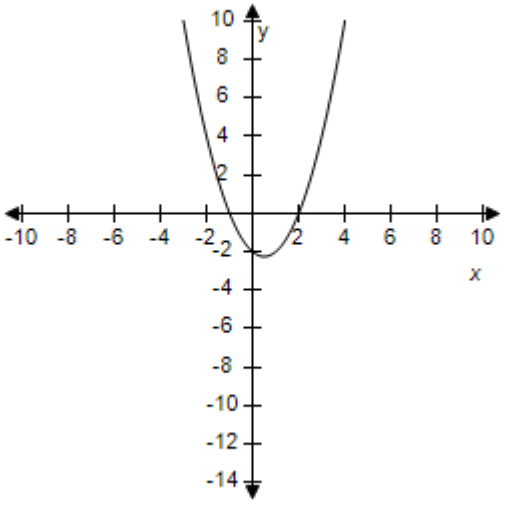
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c.



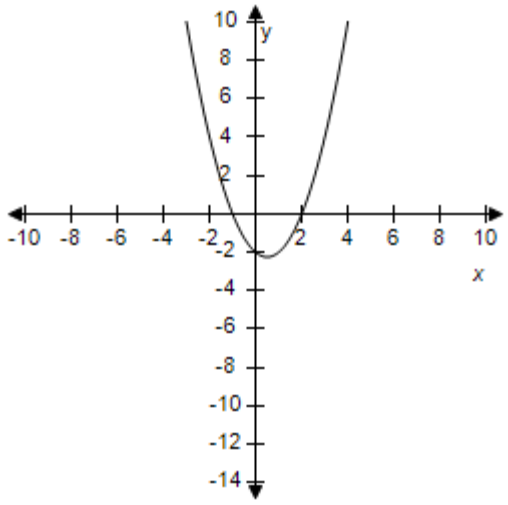
$x = 0.5, 2$

d.



$x = -1, 0.5$

e.



$x = -1, 2$

ANSWER: e
POINTS: 1
REFERENCES: 1.4.64
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:16 PM
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41. Use the Quadratic Formula to solve the equation.

$49x^2 + 56x + 14 = 0$

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a. $x = \frac{-\sqrt{2}-4}{7}, x = \frac{\sqrt{2}-4}{7}$

b. $x = \frac{-\sqrt{3}-3}{7}, x = \frac{\sqrt{3}-3}{7}$

c. $x = \frac{-\sqrt{3}-4}{7}, x = \frac{\sqrt{3}-4}{7}$

d. $x = \frac{-\sqrt{2}-5}{7}, x = \frac{\sqrt{2}-5}{7}$

e. $x = \frac{-\sqrt{3}-3}{7}, x = \frac{-\sqrt{3}-5}{7}$

ANSWER: a
POINTS: 1
REFERENCES: 1.4.76
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 9/25/2014 1:14 AM
DATE MODIFIED: 10/23/2014 5:38 AM

42. Use the Quadratic Formula to solve the equation.

$x^2 - 18x + 79 = 0$

a. $x = 11, x = 7$
b. $x = -\sqrt{2} + 9, x = \sqrt{2} + 9$
c. $x = -\sqrt{3} + 9, x = \sqrt{3} + 9$
d. $x = -9, x = 9$
e. $x = -\sqrt{2} + 10, x = \sqrt{2} + 10$

ANSWER: b
POINTS: 1
REFERENCES: 1.4.78
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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43. Use the Quadratic Formula to solve the equation.

$52x - 169x^2 = 4$

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a. $-\frac{2}{13}$

b. $\frac{1}{2}$

c. $-\frac{13}{2}$

d. $\frac{2}{13}$

e. $\frac{13}{2}$

ANSWER: d
POINTS: 1
REFERENCES: 1.4.89
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:16 PM
DATE MODIFIED: 10/23/2014 5:48 AM

44. Use the Quadratic Formula to solve the equation $-1.1x^2 - 1.3x + 4.7 = 0$. (Round your answer to three decimal places.)

a. $x = -4.797, x = 1.654$
b. $x = -1.274, x = -1.652$
c. $x = -2.741, x = 1.559$
d. $x = -1.475, x = -0.999$
e. $x = -3.882, x = 3.704$

ANSWER: c
POINTS: 1
REFERENCES: 1.4.91
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:16 PM
DATE MODIFIED: 10/23/2014 5:52 AM

45. Use the Quadratic Formula to solve $(\frac{4}{5}x - 10)^2 = 8x$

a. $x = \frac{50+25\sqrt{5}}{8}, x = \frac{50-25\sqrt{5}}{8}$

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b. $x = \frac{75+25\sqrt{3}}{8}, x = \frac{75-25\sqrt{3}}{8}$

c. $x = \frac{75+25\sqrt{3}}{4}, x = \frac{75-25\sqrt{3}}{4}$

d. $x = \frac{75+25\sqrt{5}}{8}, x = \frac{75-25\sqrt{5}}{8}$

e. $x = \frac{75+25\sqrt{5}}{4}, x = \frac{75-25\sqrt{5}}{4}$

ANSWER: e
POINTS: 1
REFERENCES: 1.4.96
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 9/25/2014 2:30 AM
DATE MODIFIED: 10/23/2014 5:59 AM

46. Use the Quadratic Formula to solve the equation $-50x^2 + 25x + 950 = 0$. (Round your answer to three decimal places.)

a. $x = -6.172, x = 4.711$
b. $x = -2.850, x = 2.058$
c. $x = -2.649, x = 1.405$
d. $x = -5.257, x = 6.761$
e. $x = -4.116, x = 4.616$

ANSWER: e
POINTS: 1
REFERENCES: 1.4.101
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:16 PM
DATE MODIFIED: 4/9/2021 8:26 AM

47. Solve the following quadratic equation using any convenient method.

$20x^2 = -x$

a. $x = -\frac{1}{20}, x = 0$

b. $x = -1$

c. $x = -\frac{1}{20}, x = \frac{1}{20}$

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d. $x = -\frac{1}{20}$

e. $x = -1, x = 20$

ANSWER: a
POINTS: 1
REFERENCES: 1.4.106
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 9/25/2014 3:57 AM
DATE MODIFIED: 9/25/2014 5:14 AM

48. Solve the equation using any convenient method.

$x^2 - 10x + 25 = 0$

a. 5
b. 9
c. 6
d. 8
e. 7

ANSWER: a
POINTS: 1
REFERENCES: 1.4.108
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:16 PM
DATE MODIFIED: 9/25/2014 4:11 AM

49. Solve the following quadratic equation using any convenient method.

$(-9x + 11)^2 = 81x^2$

a. $x = -\frac{11}{9}, x = 0$

b. $x = \frac{11}{9}$

c. $x = -\frac{11}{18}$

d. $x = \frac{11}{18}$

e. $x = -\frac{11}{9}, x = \frac{11}{9}$

ANSWER: d
POINTS: 1
REFERENCES: 1.4.111

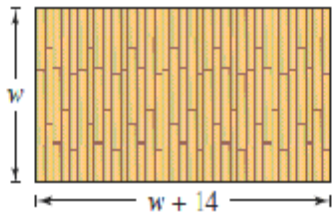
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Section 1.4 - Quadratic Equations and Applications

QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 9/25/2014 4:14 AM
DATE MODIFIED: 9/25/2014 4:39 AM

50. The floor of a one-story building is 14 feet longer than it is wide (see figure). The building has 2,760 square feet of floor space.



Write a quadratic equation for the area of the floor in terms of w and find the length and width of the floor.

a. $w\,(w + 14) = 2{,}760$
$w = 50$ ft and $l = 60$ ft

b. $w\,(w + 14) = 2{,}760$
$w = 49$ ft and $l = 60$ ft

c. $w\,(w + 14) = 2{,}760$
$w = 47$ ft and $l = 60$ ft

d. $w\,(w + 14) = 2{,}760$
$w = 48$ ft and $l = 60$ ft

e. $w\,(w + 14) = 2{,}760$
$w = 46$ ft and $l = 60$ ft

ANSWER: e
POINTS: 1
REFERENCES: 1.4.113
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:16 PM
DATE MODIFIED: 10/23/2014 6:52 AM

51. Write $x(x + 9) = 3x^2 - 8$ in general form.

a. $2x^2 - 17 = 0$

b. $4x^2 + 9x - 8 = 0$

c. $4x^2 - 9x + 8 = 0$

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d. $2x^2 - 9x - 8 = 0$

e. $2x^2 + 9x + 8 = 0$

ANSWER: d
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 1-4
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:16 PM
DATE MODIFIED: 9/25/2014 4:56 AM

52. Solve $1 + 4x^2 + 4x = 0$ by factoring.

a. $x = -\frac{1}{2}$

b. $x = -2, -1$

c. $x = -\frac{1}{2}, \frac{1}{2}$

d. $x = 1, 2$

e. $x = -2, 2$

ANSWER: a
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 5-14
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 9/25/2014 4:59 AM
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53. Solve the following quadratic equation with respect to w by factoring.

$(w-a)^2 - 9b^2 = 0$

a. $w = a, 9b$

b. $w = a + 3b, -a + 3b$

c. $w = a, -9b$

d. $w = a + 3b, a - 3b$

e. $w = -a - 3b, -a + 3b$

ANSWER: d
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 5-14
QUESTION TYPE: Multi-Mode (Multiple choice)

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Section 1.4 - Quadratic Equations and Applications

HAS VARIABLES: True
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DATE CREATED: 6/10/2014 4:16 PM
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54. Solve $(x + 4)^2 = 9$ by extracting square roots.

a. $x = -3, -5$
b. $x = -3, -10$
c. $x = -1, -7$
d. $x = 0, -9$
e. $x = -4, -6$

ANSWER: c
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 15-22
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:16 PM
DATE MODIFIED: 10/23/2014 7:06 AM

55. Solve $x^2 + 12x + 33 = 0$ by completing the square.

a. $x = -36 \pm \sqrt{3}$
b. $x = -6 \pm \sqrt{3}$
c. $x = -33 \pm \sqrt{3}$
d. $x = 33 \pm \sqrt{3}$
e. $x = 6 \pm \sqrt{3}$

ANSWER: b
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 23-32
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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56. Solve $36x^2 - 48x + 11 = 0$ using the quadratic formula.

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a. $x = \frac{-4 \pm \sqrt{5}}{6}$

b. $x = \frac{\pm\sqrt{5}}{6}$

c. $x = \frac{-6 \pm \sqrt{5}}{4}$

d. $x = \frac{4 \pm \sqrt{5}}{6}$

e. $x = -\frac{2}{3}$

ANSWER: d
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 45-52
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 9/25/2014 7:23 AM
DATE MODIFIED: 5/21/2021 6:08 AM

57. Solve $16x^2 - 6 = 0$ using the quadratic formula.

a. $x = \frac{2 \pm \sqrt{6}}{4}$

b. $x = \frac{\pm\sqrt{6}}{4}$

c. $x = \frac{-4 \pm \sqrt{6}}{2}$

d. $x = \frac{-2 \pm \sqrt{6}}{4}$

e. $x = \frac{1}{2}$

ANSWER: b
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 45-52
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
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Section 1.4 - Quadratic Equations and Applications

DATE MODIFIED: 5/21/2021 6:09 AM

58. Solve $-x^2 + 2x + 2 = 0$ using the quadratic formula. Round answers to the nearest thousandth.

a. $x = -1.644, 2.862$
b. $x = -1.182, 2.402$
c. $x = -0.732, 2.732$
d. $x = -0.609, 1.732$
e. $x = -0.264, 2.823$

ANSWER: c
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 45-52
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:16 PM
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59. Solve:
$-12x^2 + 30x + 18 = 0$

a. $x = \frac{2}{5}, -2$
b. $x = \frac{1}{2}, \frac{2}{5}$
c. $x = -3, \frac{1}{2}$
d. $x = -3, -2$
e. $x = 3, -\frac{1}{2}$

ANSWER: e
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 53-60
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 9/25/2014 8:19 AM
DATE MODIFIED: 5/15/2015 3:16 AM

60. Solve the following equation using any convenient method.
$(x + 2)^2 = -25$

a. $x = -2, 5$
b. $x = -2 \pm 5i$
c. $x = -25, 5$

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d. $x = -25, -2$

e. $x = -5 \pm 2i$

ANSWER: b
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 53-60
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:16 PM
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61. Solve the following equation using any convenient method.
$x^2 - 4x + \frac{37}{9} = 0$

a. $x = -1 \pm \frac{2}{3}i$

b. $x = -3, -2$

c. $x = -2, 7$

d. $x = 2 \pm \frac{1}{3}i$

e. $x = 6 \pm i$

ANSWER: d
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 53-60
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 9/26/2014 1:37 AM
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62. Solve the following equation using any convenient method.
$(x-7)^2 = x^2$

a. $x = -\frac{49}{4}$

b. $x = 49$

c. $x = 7$

d. $x = -7, 4$

e. $x = \frac{7}{2}$

ANSWER: e
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 53-60

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Section 1.4 - Quadratic Equations and Applications

QUESTION TYPE: Multiple Choice
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63. Find two quadratic equations having the following solutions.
$5+3\sqrt{2}, 5-3\sqrt{2}$

a. $x^2-10x+18=0; -2x^2+20x-36=0$

b. $x^2+7=0; -2x^2-14=0$

c. $x^2-10x+7=0; -2x^2+20x-14=0$

d. $x^2+6x+7=0; -2x^2-12x-14=0$

e. $x^2-10x+6=0; -2x^2+20x-12=0$

ANSWER: c
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 67-76
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:16 PM
DATE MODIFIED: 9/25/2014 9:05 AM

64. Find two quadratic equations having the following solutions.
$4 + 7i, 4 - 7i$

a. $x^2-8x+65=0; -x^2+8x-65=0$

b. $x^2-8x+9=0; -x^2-4x+65=0$

c. $x^2+8x+23=0; -x^2-8x-33=0$

d. $-x^2-14x+65=0; x^2+14x-65=0$

e. $x^2+12x+11=0; -x^2-14x-3=0$

ANSWER: a
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 67-76
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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Section 1.4 - Quadratic Equations and Applications

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Section 1.5 - Complex Numbers

1. Find real numbers a and b such that the equation is true.

$a + bi = -8 + 18i$

a. $a = -12, b = 22$
b. $a = -10, b = 20$
c. $a = -11, b = 21$
d. $a = -9, b = 19$
e. $a = -8, b = 18$

ANSWER: e
POINTS: 1
REFERENCES: 1.5.5
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:19 PM
DATE MODIFIED: 10/3/2014 6:36 AM

2. Find real numbers a and b such that the equation is true.

$a + bi = 2 + 6i$

a. $a = 4, b = 8$
b. $a = 6, b = 10$
c. $a = 2, b = 6$
d. $a = 3, b = 2$
e. $a = 5, b = 9$

ANSWER: c
POINTS: 1
REFERENCES: 1.5.6
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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3. Find real numbers a and b such that the equation is true.

$(a - 4) + (b + 5)i = 13 + 11i$

a. $a = 20,\ b = 9$
b. $a = 18,\ b = 7$
c. $a = 19,\ b = 8$
d. $a = 17,\ b = 6$

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e. $a = 21,\ b = 10$

ANSWER: d
POINTS: 1
REFERENCES: 1.5.7
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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4. Find real numbers a and b such that the equation is true.

$(a+4)+2bi = 4-17i$

a. $a = 0,\ b = -\frac{21}{2}$
b. $a = 0,\ b = -\frac{17}{2}$
c. $a = 0,\ b = -\frac{19}{2}$
d. $a = 0,\ b = -9$
e. $a = 0,\ b = -10$

ANSWER: b
POINTS: 1
REFERENCES: 1.5.8
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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5. Write the complex number in standard form.

$8+\sqrt{-25}$

a. $8+25i$
b. $11-8i$
c. $11+8i$
d. $8-5i$
e. $8+5i$

ANSWER: e
POINTS: 1
REFERENCES: 1.5.9
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True

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Section 1.5 - Complex Numbers

STUDENT ENTRY MODE: Basic
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6. Write the complex number in standard form.

$3 - \sqrt{-30}$

a. $3 + \sqrt{30}i$
b. $4 + \sqrt{30}i$
c. $7 - \sqrt{30}i$
d. $3 - \sqrt{30}i$
e. $4 - \sqrt{30}i$

ANSWER: d
POINTS: 1
REFERENCES: 1.5.11
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:19 PM
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7. Write the complex number in standard form.

$\sqrt{-36}$

a. $\sqrt{37}i$
b. $-\sqrt{39}i$
c. $6i$
d. $\sqrt{39}i$
e. $-6i$

ANSWER: c
POINTS: 1
REFERENCES: 1.5.13
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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8. Write the complex number in standard form.

$\sqrt{-36}$

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a. $6i$
b. $-6i$
c. $36i$
d. $7i$
e. $-36i$

ANSWER: a
POINTS: 1
REFERENCES: 1.5.14
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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9. Write the complex number in standard form.

$-4i + i^2$

a. $-1 + 4i$
b. $-1 + 7i$
c. $1 + 4i$
d. $1 - 4i$
e. $-1 - 4i$

ANSWER: e
POINTS: 1
REFERENCES: 1.5.17
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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10. Write the complex number in standard form.

$\sqrt{-17.64}$

a. $17.64i$
b. $4.2i$
c. $7.2i$
d. $-4.2i$
e. $-17.64i$

ANSWER: b
POINTS: 1
REFERENCES: 1.5.19

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Section 1.5 - Complex Numbers

QUESTION TYPE: Multi-Mode (Multiple choice)
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11. Write the complex number in standard form.

$\sqrt{-0.0001}$

a. $-0.01i$
b. $-0.0001i$
c. $3.01i$
d. $0.01i$
e. $0.0001i$

ANSWER: d
POINTS: 1
REFERENCES: 1.5.20
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:19 PM
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12. Perform the addition or subtraction and write the result in standard form.

$(7+i)+(5-5i)$

a. $16-8i$
b. $15-7i$
c. $12-4i$
d. $14-6i$
e. $13-5i$

ANSWER: c
POINTS: 1
REFERENCES: 1.5.21
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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13. Perform the addition or subtraction and write the result in standard form.

$(12-i)-(7-i)$

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a. 5
b. 7
c. 9
d. 8
e. 6

ANSWER: a
POINTS: 1
REFERENCES: 1.5.23
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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14. Perform the addition or subtraction and write the result in standard form.

$19i - (15 - 3i)$

a. $15 + 22i$
b. $-15 - 22i$
c. $15 - 22i$
d. $-15 + 22i$
e. $-15 + 25i$

ANSWER: d
POINTS: 1
REFERENCES: 1.5.27
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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15. Perform the addition or subtraction and write the result in standard form.

$33 + (-10 + 13i) + 20i$

a. $23 + 33i$
b. $23 - 33i$
c. $-23 - 33i$
d. $-23 + 33i$
e. $23 + 35i$

ANSWER: a
POINTS: 1
REFERENCES: 1.5.28

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Section 1.5 - Complex Numbers

QUESTION TYPE: Multi-Mode (Multiple choice)
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16. Perform the addition or subtraction and write the result in standard form.

$(1.5+6.7i)+(-7.3+6.5i)$

a. $-5.8+14.2i$
b. $-5.8-14.2i$
c. $-5.8-13.2i$
d. $-5.8+13.2i$
e. $-5.8+15.2i$

ANSWER: d
POINTS: 1
REFERENCES: 1.5.30
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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17. Perform the operation and write the result in standard form.

$(1+i)(9-8i)$

a. $18+i$
b. $17+i$
c. $19+i$
d. $21+i$
e. $20+i$

ANSWER: b
POINTS: 1
REFERENCES: 1.5.31
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:19 PM
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18. Perform the operation and write the result in standard form.

$19i(1-6i)$

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a. $115+19i$
b. $118+19i$
c. $116+19i$
d. $114+19i$
e. $117+19i$

ANSWER: d
POINTS: 1
REFERENCES: 1.5.33
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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19. Perform the operation and write the result in standard form.

$\left(\sqrt{19}+\sqrt{8}\,i\right)\left(\sqrt{19}-\sqrt{8}\,i\right)$

a. 31
b. 27
c. 28
d. 29
e. 30

ANSWER: b
POINTS: 1
REFERENCES: 1.5.35
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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20. Perform the operation and write the result in standard form.

$(4+5i)^2$

a. $-9+40i$
b. $-9-40i$
c. $9-40i$
d. $-40+9i$
e. $9+40i$

ANSWER: a
POINTS: 1

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Section 1.5 - Complex Numbers

REFERENCES: 1.5.37
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:19 PM
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21. Perform the operation and write the result in standard form.

$(8-7i)^2$

a. $15-112i$
b. $-15-112i$
c. $15+112i$
d. $17-112i$
e. $-15+112i$

ANSWER: a
POINTS: 1
REFERENCES: 1.5.38
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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22. Write the complex conjugate of the complex number. Then multiply the number by its complex conjugate.

$5+3i$

a. $5+3i, 34$
b. $5-3i, 9$
c. $5+3i, 9$
d. $-5-3i, 34$
e. $5-3i, 34$

ANSWER: e
POINTS: 1
REFERENCES: 1.5.41
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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23. Write the complex conjugate of the complex number. Then multiply the number by its complex conjugate.

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Section 1.5 - Complex Numbers

$2 - 14i$

a. $2 + 14i,\ 196$
b. $2 - 14i,\ 196$
c. $2 - 14i,\ 200$
d. $-2 + 14i,\ 196$
e. $2 + 14i,\ 200$

ANSWER: e
POINTS: 1
REFERENCES: 1.5.42
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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24. Write the complex conjugate of the complex number. Then multiply the number by its complex conjugate.

$-14 + \sqrt{13}\,i$

a. $-14 - \sqrt{13}\,i,\ 209$
b. $14 - \sqrt{13}\,i,\ 209$
c. $-14 + \sqrt{13}\,i,\ 209$
d. $14 + \sqrt{13}\,i,\ 209$
e. $-13 - \sqrt{14}\,i,\ 209$

ANSWER: a
POINTS: 1
REFERENCES: 1.5.44
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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25. Write the complex conjugate of the complex number. Then multiply the number by its complex conjugate.

$-1 - \sqrt{7}\,i$

a. $-1 + \sqrt{7}\,i,\ 100$
b. $-1 + \sqrt{7}\,i,\ 8$

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c. $-1+\sqrt{7}i, -6$

d. $1-\sqrt{7}i, 100$

e. $1+\sqrt{7}i, 8$

ANSWER: b
POINTS: 1
REFERENCES: 1.5.43
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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26. Write the complex conjugate of the complex number. Then multiply the number by its complex conjugate.

$\sqrt{-39}$

a. $-38i$, 39
b. $\sqrt{39}i$, 39
c. $1521i$, 39
d. $-\sqrt{39}i$, 39
e. $-i$, 39

ANSWER: d
POINTS: 1
REFERENCES: 1.5.45
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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27. Write the quotient in standard form.

$\frac{2}{i}$

a. $-\frac{i}{2}$

b. $-\frac{2}{i}$

c. $-2i$

d. $\frac{i}{2}$

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e. $2i$

ANSWER: c
POINTS: 1
REFERENCES: 1.5.49
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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28. Write the quotient in standard form.

$$-\frac{20}{5i}$$

a. $4i$
b. $\frac{4}{i}$
c. $-\frac{i}{4}$
d. $-4i$
e. $-\frac{4}{i}$

ANSWER: a
POINTS: 1
REFERENCES: 1.5.50
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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29. Write the quotient in standard form.

$$\frac{11}{1-i}$$

a. $\frac{11}{2+i}$
b. $\frac{11}{2}i$
c. $\frac{11}{2-i}$

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d. $\frac{11}{2} + \frac{11}{2}i$

e. $\frac{11}{2} - \frac{11}{2}i$

ANSWER: d
POINTS: 1
REFERENCES: 1.5.52
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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30. Write the quotient in standard form.

$$\frac{4+i}{4-i}$$

a. $\frac{15}{17} - \frac{8}{17}i$

b. $\frac{15}{17} + \frac{17}{8}i$

c. $\frac{15}{17} + \frac{8}{17}i$

d. $\frac{17}{15} + \frac{17}{8}i$

e. $\frac{17}{15} + \frac{8}{17}i$

ANSWER: c
POINTS: 1
REFERENCES: 1.5.53
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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31. Write the quotient in standard form.

$$\frac{7-9i}{i}$$

a. $-7-9i$

b. $-9-7i$

c. $-9+7i$

d. $9-7i$

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e. $9 + 7i$

ANSWER: b
POINTS: 1
REFERENCES: 1.5.55
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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32. Write the quotient in standard form.

$$\frac{6 + 12i}{4i}$$

a. $3 - \frac{3}{2}i$
b. $3 - 3i$
c. $3 + \frac{3}{2}i$
d. $3i - \frac{3}{2}$
e. $3i + \frac{3}{2}$

ANSWER: a
POINTS: 1
REFERENCES: 1.5.56
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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33. Perform the operation and write the result in standard form.

$$\frac{3}{1 + i} - \frac{4}{1 - i}$$

a. $-\frac{1}{2} + \frac{2}{7}i$
b. $-\frac{1}{2} - \frac{2}{7}i$
c. $-\frac{1}{2} + \frac{7}{2}i$
d. $\frac{7}{2} - \frac{1}{2}i$

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e. $-\frac{1}{2}-\frac{7}{2}i$

ANSWER: e
POINTS: 1
REFERENCES: 1.5.59
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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34. Write the complex number in standard form.

$\sqrt{-6} \cdot \sqrt{-7}$

a. $-\sqrt{6}$
b. $\sqrt{7}$
c. $\sqrt{6}$
d. $-\sqrt{42}$
e. $\sqrt{42}$

ANSWER: d
POINTS: 1
REFERENCES: 1.5.63
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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35. Write the complex number in standard form.

$\sqrt{-20} \times \sqrt{-18}$

a. $6\sqrt{10}$
b. $-\sqrt{20}$
c. $-6\sqrt{10}$
d. $\sqrt{18}$
e. $\sqrt{20}$

ANSWER: c
POINTS: 1
REFERENCES: 1.5.64

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Section 1.5 - Complex Numbers

QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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36. Write the complex number in standard form.

$\left(\sqrt{-48}\right)^2$

a. $-\sqrt{48}$
b. -48
c. $\sqrt{23}$
d. 48
e. $\sqrt{48}$

ANSWER: b
POINTS: 1
REFERENCES: 1.5.65
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:19 PM
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37. Write the complex number in standard form.

$\left(4+\sqrt{-6}\right)\left(6-\sqrt{-14}\right)$

a. $(24-2\sqrt{21})-(6\sqrt{6}-4\sqrt{14})i$
b. $(24+2\sqrt{21})+(6\sqrt{6}-4\sqrt{14})i$
c. $(24-2\sqrt{21})+(6\sqrt{6}-4\sqrt{14})i$
d. $(24+2\sqrt{21})-(6\sqrt{6}-4\sqrt{14})i$
e. $(24+2\sqrt{21})+(6\sqrt{6}+4\sqrt{14})i$

ANSWER: b
POINTS: 1
REFERENCES: 1.5.67
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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38. Write the complex number in standard form.

$\left(2-\sqrt{-15}\right)^2$

a. $-11+\sqrt{15}i$
b. $-11+4\sqrt{15}i$
c. $-11-\sqrt{15}i$
d. $-11-4\sqrt{15}i$
e. $4-15\sqrt{5}i$

ANSWER: d
POINTS: 1
REFERENCES: 1.5.68
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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39. Solve the equation and write complex solutions in standard form.

$x^2+10x+29=0$

a. $x=10-2i, 10+2i$
b. $x=-2-5i, -2+5i$
c. $x=-5+4i, -5-4i$
d. $x=-5-2i, -5+2i$
e. $x=-2+25i, -2-25i$

ANSWER: d
POINTS: 1
REFERENCES: 1.5.69
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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40. Solve the equation and write complex solutions in standard form.

$x^2-18x+91=0$

a. $x=9+\sqrt{10}i, 9-\sqrt{10}i$
b. $x=10+\sqrt{2}i, 10-\sqrt{2}i$
c. $x=9+\sqrt{2}i, 9-\sqrt{2}i$

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d. $x = 10+\sqrt{10}i,\ 10-\sqrt{10}i$

e. $x = 2+\sqrt{10}i,\ 2-\sqrt{10}i$

ANSWER: a
POINTS: 1
REFERENCES: 1.5.70
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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41. Simplify the complex number and write it in standard form.

$-5i^3+i^2$

a. $1+5i$
b. $-1-5i$
c. $-5i$
d. $1-5i$
e. $-1+5i$

ANSWER: e
POINTS: 1
REFERENCES: 1.5.79
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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42. Simplify the complex number and write it in standard form.

$3i^2-7i^3$

a. $-7+3i$
b. $3+7i$
c. $-3-7i$
d. $-3+7i$
e. $3-7i$

ANSWER: d
POINTS: 1
REFERENCES: 1.5.80
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True

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Section 1.5 - Complex Numbers

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43. Simplify the complex number and write it in standard form.

$-42i^5$

a. $-42i^3$
b. $42i^3$
c. $-42i$
d. -42
e. $42i$

ANSWER: c
POINTS: 1
REFERENCES: 1.5.81
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:19 PM
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44. Simplify the complex number and write it in standard form.

$\left(\sqrt{-57}\right)^3$

a. $185{,}193i$
b. $-57i$
c. $-57\sqrt{57}i$
d. $57\sqrt{57}i$
e. $-185{,}193i$

ANSWER: c
POINTS: 1
REFERENCES: 1.5.83
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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45. Simplify the complex number and write it in standard form.

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$$\frac{14}{i^3}$$

a. $14i^3$
b. $-14i^3$
c. 14
d. $-14i$
e. $14i$

ANSWER: e
POINTS: 1
REFERENCES: 1.5.85
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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46. Simplify the complex number and write it in standard form.

$$\frac{1}{(2i)^3}$$

a. $\frac{1}{2}i$
b. $-\frac{1}{8}i$
c. $\frac{1}{8}i$
d. $-\frac{1}{2}i$
e. $8i$

ANSWER: c
POINTS: 1
REFERENCES: 1.5.86
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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47. Simplify the complex number and write it in standard form.

$(2i)^4$

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a. 16
b. –16
c. 16i
d. –16i
e. 2i

ANSWER: a
POINTS: 1
REFERENCES: 1.5.87
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:19 PM
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48. Simplify the complex number and write it in standard form.

$(-i)^5$

a. –1
b. –i
c. 1
d. i
e. 5

ANSWER: b
POINTS: 1
REFERENCES: 1.5.88
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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49. Raise the complex number to the fourth power.

4i

a. 256
b. –64
c. 64
d. 16
e. –256

ANSWER: a
POINTS: 1
REFERENCES: 1.5.91ac
QUESTION TYPE: Multi-Mode (Multiple choice)

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Section 1.5 - Complex Numbers

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50. Describe the error.

$\sqrt{-8}\sqrt{-8} = \sqrt{(-8)(-8)} = \sqrt{64} = 8$

a. $\sqrt{-8}\sqrt{-8} = \sqrt{8}\,i\sqrt{8}\,i = 8i = -8i$

b. $\sqrt{-8}\sqrt{-8} = \sqrt{8}\,i\sqrt{8}\,i = -64$

c. $\sqrt{-8}\sqrt{-8} = \sqrt{8}\,i\sqrt{8}\,i = 8i$

d. $\sqrt{-8}\sqrt{-8} = \sqrt{8}\,i\sqrt{8}\,i = 8i^2 = -8$

e. $\sqrt{-8}\sqrt{-8} = \sqrt{8}\,i\sqrt{8}\,i = 8i^2 = 8$

ANSWER: d
POINTS: 1
REFERENCES: 1.5.99
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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51. Do the operation and express the answer in $a + bi$ form.

$(5 - 5i) + (8 + 3i)$

a. $2 - 13i$
b. $-13 + 2i$
c. $13 + 2i$
d. $-13 - 2i$
e. $13 - 2i$

ANSWER: e
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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52. Do the operation and express the answer in $a + bi$ form.

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Section 1.5 - Complex Numbers

$\left(5-\sqrt{-25}\right)-(2i-3)$

a. $-8+14i$
b. $8+7i$
c. $-8+7i$
d. $-8-7i$
e. $8-7i$

ANSWER: e
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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53. Do the operation and express the answer in $a + bi$ form.

$\left(9-\sqrt{-100}\right)+\left(10+\sqrt{-36}\right)$

a. $19-4i$
b. $-38-8i$
c. $19+4i$
d. $-38+8i$
e. $-19+4i$

ANSWER: a
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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54. Do the operation and express the answer in $a + bi$ form.

$\left(5+\sqrt{-16}\right)\left(4-\sqrt{-4}\right)$

a. $28-5i$
b. $-28+6i$
c. $-5+6i$
d. $5-6i$
e. $28+6i$

ANSWER: e
POINTS: 1

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QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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55. Do the operation and express the answer in $a + bi$ form.

$$\frac{-19}{i^{36}}$$

a. $19i$
b. $-19i$
c. $-190i$
d. -19
e. 19

ANSWER: d
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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56. Simplify the expression.

i^{-14}

a. i
b. $-3i$
c. $-i$
d. -1
e. 1

ANSWER: d
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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57. Do the operation and express the answer in $a + bi$ form.

$$\frac{17}{i^{31}}$$

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a. $-17i$
b. $-85i$
c. -17
d. $17i$
e. 17

ANSWER: d
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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58. Find the values of x and y.

$x + 59i = y - yi$

$x =$ _____

$y =$ _____

ANSWER: $-59;\ -59$
POINTS: 1
QUESTION TYPE: Subjective Short Answer
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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59. Do the operation and express the answer in $a + bi$ form. Do not use parentheses in your answer.

$(3 - 8i) + (10 + 5i)$

ANSWER: $13 - 3i$
POINTS: 1
QUESTION TYPE: Subjective Short Answer
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:19 PM
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60. Do the operation and express the answer in $a + bi$ form. Use fractions in your answer.

$$\frac{1}{9+i}$$

ANSWER: $\frac{9}{82} - \frac{i}{82}$

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POINTS:	1
QUESTION TYPE:	Subjective Short Answer
HAS VARIABLES:	True
STUDENT ENTRY MODE:	Basic
DATE CREATED:	6/10/2014 4:19 PM
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Section 1.6 - Other Types of Equations

1. Find all solutions of the equation.

$6x^4 - 22x^2 = 0$

a. $0, \pm\frac{\sqrt{33}}{3}$

b. $0, \pm\frac{\sqrt{3}}{33}$

c. $0, \frac{\sqrt{33}}{3}$

d. $0, \frac{\sqrt{3}}{33}$

e. $0, -\frac{\sqrt{33}}{3}$

ANSWER: a
POINTS: 1
REFERENCES: 1.6.5
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:16 PM
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2. Find all solutions of the equation.

$x^4 - 256 = 0$

a. $-4, -4i$
b. $4, \pm 4i$
c. $\pm 4, \pm 4i$
d. $4, 4i$
e. $\pm 4, 4i$

ANSWER: c
POINTS: 1
REFERENCES: 1.6.7
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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3. Find all solutions of the equation.

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Section 1.6 - Other Types of Equations

$2x^3 + 20x^2 + 50x = 0$

a. $\pm 2, 0$
b. $5, 0$
c. $-5, 0$
d. $\pm 5, 0$
e. $-2, 0$

ANSWER: c
POINTS: 1
REFERENCES: 1.6.11
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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4. Find all solutions of the equation.

$x^3 - 8x^2 - x + 8 = 0$

a. $8, -1$
b. $-8, -1$
c. $-8, 1, -1$
d. $8, 1, -1$
e. $8, 1$

ANSWER: d
POINTS: 1
REFERENCES: 1.6.13
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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5. Find all solutions of the equation.

$x^4 + 4x^3 - 64x - 256 = 0$

a. $\pm 4, -2 - 2\sqrt{3}\,i$
b. $\pm 4, 2 \pm 2\sqrt{3}\,i$
c. $\pm 4, -2 + 2\sqrt{3}\,i$
d. $\pm 4, -2 \pm 2\sqrt{3}\,i$

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e. $4,\ -2 \pm 2\sqrt{3}\,i$

ANSWER: d
POINTS: 1
REFERENCES: 1.6.16
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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6. Find all solutions of the equation.

$x^6 - 4096 = 0$

a. $4,\ 2+2\sqrt{3}\,i,\ -2+2\sqrt{3}\,i$

b. $\pm 4,\ 2 \pm 2\sqrt{3}\,i,\ -2 \pm 2\sqrt{3}\,i$

c. $\pm 4,\ 2+2\sqrt{3}\,i,\ -2 \pm 2\sqrt{3}\,i$

d. $4,\ 2 \pm 2\sqrt{3}\,i,\ -2 \pm 2\sqrt{3}\,i$

e. $\pm 4,\ 2 \pm 2\sqrt{3}\,i,\ -2-2\sqrt{3}\,i$

ANSWER: b
POINTS: 1
REFERENCES: 1.6.8
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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7. Find all solutions of the equation.

$\sqrt{8x} = 4$

a. 4
b. 6
c. 3
d. 2
e. 5

ANSWER: d
POINTS: 1
REFERENCES: 1.6.35
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True

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Section 1.6 - Other Types of Equations

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8. Find all solutions of the equation.

$6\sqrt{x} - 3 = 0$

a. $\frac{5}{18}$
b. $\frac{2}{9}$
c. $\frac{7}{36}$
d. $\frac{11}{36}$
e. $\frac{1}{4}$

ANSWER: e
POINTS: 1
REFERENCES: 1.6.36
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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DATE MODIFIED: 9/22/2014 1:55 AM

9. Find all solutions of the equation.

$\sqrt{3-x} - 5 = 0$

a. –19
b. –22
c. –18
d. –21
e. –20

ANSWER: b
POINTS: 1
REFERENCES: 1.6.38
QUESTION TYPE: Multi-Mode (Multiple choice)
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10. Find all solutions of the equation.

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$\sqrt[3]{2x+11}+7=0$

a. –175
b. –174
c. –177
d. –176
e. –173

ANSWER: c
POINTS: 1
REFERENCES: 1.6.39
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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11. Find all solutions of the equation.

$\sqrt{x}-\sqrt{x-8}=2$

a. 9
b. 10
c. 12
d. 13
e. 11

ANSWER: a
POINTS: 1
REFERENCES: 1.6.45
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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12. Find all solutions of the equation.

$\sqrt{x+6}=\sqrt{12x+6}$

a. 3
b. 4
c. 0
d. 1
e. 2

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ANSWER: c
POINTS: 1
REFERENCES: 1.6.43
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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13. Find all solutions of the equation.

$\sqrt{x+4} = \sqrt{x-4}$

a. 0
b. 1
c. 2
d. No solution
e. 3

ANSWER: d
POINTS: 1
REFERENCES: 1.6.44
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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14. Find all solutions of the equation.

$4\sqrt{x+1} - \sqrt{2x+3} = 5$

a. 6
b. 3
c. 4
d. 5
e. 7

ANSWER: b
POINTS: 1
REFERENCES: 1.6.48
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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Section 1.6 - Other Types of Equations

15. Find all solutions of the equation.

$(x+14)^{3/2}=64$

a. 3
b. 5
c. 2
d. 4
e. 6

ANSWER: c
POINTS: 1
REFERENCES: 1.6.52
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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16. Find all solutions of the equation.

$(x^2-3)^{3/2}=8$

a. $-\sqrt{7}$
b. $\sqrt{7}$
c. ± 7
d. 7
e. $\pm\sqrt{7}$

ANSWER: e
POINTS: 1
REFERENCES: 1.6.55
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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17. Find all solutions of the equation. Don't assume a complex-valued square root.

$7x(x-3)^{1/2}+3(x-3)^{3/2}=0$

a. 4

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b. 5
c. 2
d. 3
e. 1

ANSWER: d
POINTS: 1
REFERENCES: 1.6.57
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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18. Find all solutions of the equation.

$8\sqrt{x-3}-\sqrt{7x-3}=3$

a. $-\sqrt{4}$
b. 4
c. ± 4
d. $\pm\sqrt{4}$
e. – 4

ANSWER: b
POINTS: 1
REFERENCES: 1.6.50
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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19. Find all solutions of the equation.

$\frac{x+14}{19}-\frac{x+14}{x+5}=0$

a. ±15
b. ±14
c. ±16
d. ±13
e. ±12

ANSWER: b
POINTS: 1

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REFERENCES: 1.6.70
QUESTION TYPE: Multi-Mode (Multiple choice)
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20. Find the real solutions of the equation algebraically. Round your answer to three decimal places.

$2.8x^4 - 2.4x^2 - 4.2 = 0$

a. ± 2.314
b. ± 1.314
c. ± 0.314
d. ± 3.314
e. ± 4.314

ANSWER: b
POINTS: 1
REFERENCES: 1.6.81
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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21. Select the equation which has the given solutions.

$-8, 4$

a. $x^2 - 4x - 32 = 0$
b. $x^2 + 32x - 4 = 0$
c. $x^2 - 32x - 4 = 0$
d. $x^2 + 4x + 32 = 0$
e. $x^2 + 4x - 32 = 0$

ANSWER: e
POINTS: 1
REFERENCES: 1.6.89
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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Section 1.6 - Other Types of Equations

22. Select the equation which has the given solutions.

0, 4, 8

a. $x^3 - 32x^2 + 12x = 0$

b. $x^3 - 12x^2 + 32x = 0$

c. $x^3 + 12x^2 + 32x = 0$

d. $x^3 - 12x^2 - 32x = 0$

e. $x^3 + 32x^2 + 12x = 0$

ANSWER: b
POINTS: 1
REFERENCES: 1.6.90
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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23. Select the equation which has the given solutions.

$3i, -3i$

a. $9x^2 = 0$

b. $x^2 + 9 = 0$

c. $\frac{x}{9} = 0$

d. $x^2 - 9 = 0$

e. $x^3 = 9$

ANSWER: b
POINTS: 1
REFERENCES: 1.6.95
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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24. Select the equation which has the given solutions.

$-6, 6, 6i, -6i$

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a. $1296x^4 = 0$

b. $x^4 - 1296 = 0$

c. $x^6 = -1296$

d. $\frac{x^2}{1296} = 0$

e. $x^4 + 1296 = 0$

ANSWER: b
POINTS: 1
REFERENCES: 1.6.97
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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25. Select the equation which has the given solutions.

$2i, -2i, 4, -4$

a. $x^4 - 64x^2 - 12 = 0$

b. $x^4 - 64x^2 + 12 = 0$

c. $x^4 - 12x^2 + 64 = 0$

d. $x^4 - 12x^2 - 64 = 0$

e. $x^4 + 12x^2 - 64 = 0$

ANSWER: d
POINTS: 1
REFERENCES: 1.6.98
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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26. An airline offers daily flights between Chicago and Denver. The total monthly cost C (in millions of dollars) of these flights is $C = \sqrt{0.2x + 1}$ where x is the number of passengers (in thousands). The total cost of the flights for June is 3.6 million dollars. How many passengers flew in June?

a. 62,800 passengers
b. 56,800 passengers

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c. 61,800 passengers
d. 57,800 passengers
e. 59,800 passengers

ANSWER: e
POINTS: 1
REFERENCES: 1.6.108
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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27. The demand equation for a video game is modeled by $p = 40 - \sqrt{0.01x + 1}$ where x is the number of units demanded per day and p is the price per unit. Approximate the demand when the price is $37.88. Round your answer to the nearest whole number.

a. 399 units
b. 249 units
c. 449 units
d. 349 units
e. 299 units

ANSWER: d
POINTS: 1
REFERENCES: 1.6.109
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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28. The temperature (in degrees Fahrenheit) of saturated steam increases as pressure increases. This relationship is approximated by the model

$$T = 75.82 - 2.11x + 43.51\sqrt{x}, \quad 5 \le x \le 40$$

where x is the absolute pressure (in pounds per square inch).
Complete the table. Round your answers to two decimal places.

Absolute pressure, x	15	20	25	35	40
Temperature, T					

a.

x	15	20	25	35	40
T	212.68	266.60	240.62	259.38	228.20

b.

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x	15	20	25	35	40
T	212.68	228.20	240.62	259.38	266.60

c.

x	15	20	25	35	40
T	212.68	228.20	240.62	266.60	259.38

d.

x	15	20	25	35	40
T	212.68	240.62	228.20	259.38	266.60

e.

x	15	20	25	35	40
T	212.68	228.20	259.38	240.62	266.60

ANSWER: b
POINTS: 1
REFERENCES: 1.6.107a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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29. A meteorologist is positioned 100 feet from the point where a weather balloon is launched. When the balloon is at height h, the distance d (in feet) between the meteorologist and the balloon is $d = \sqrt{100^2 + h^2}$.

Complete the table. Use the table to approximate the value of h when $d = 200$. Round your answers to two decimal places.

h	160	165	170	175	185
d					

a.

h	160	165	170	175	185
d	188.68	192.94	197.23	210.30	201.56

The height is between 170 and 175 feet when $d = 200$.

b.

h	160	165	170	175	185
d	188.68	197.23	192.94	201.56	210.30

The height is between 170 and 175 feet when $d = 200$.

c.

h	160	165	170	175	185
d	188.68	210.30	197.23	201.56	192.94

The height is between 170 and 175 feet when $d = 200$.

d.

h	160	165	170	175	185
d	188.68	192.94	201.56	197.23	210.30

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The height is between 170 and 175 feet when $d = 200$.

e.

h	160	165	170	175	185
d	188.68	192.94	197.23	201.56	210.30

The height is between 170 and 175 feet when $d = 200$.

ANSWER: e
POINTS: 1
REFERENCES: 1.6.112b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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30. You construct a cone with a base radius of 8 inches. The lateral surface area S of the cone can be represented by the equation

$$S = 8\pi\sqrt{64 + h^2}$$

where h is the height of the cone.
Find h algebraically when $S = 371$. Round the answer to one decimal place.

a. 12.4
b. 13.4
c. 14.4
d. 15.4
e. 16.4

ANSWER: a
POINTS: 1
REFERENCES: 1.6.113c
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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31. Find all solutions of the equation $|x - 10| = x^2 - 10x$.

a. $-10, 1$
b. $1, -1$
c. $10, 3$
d. $10, -1$
e. $-10, -1$

ANSWER: d

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POINTS: 1
REFERENCES: 1.6.76
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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32. Consider an equation of the form $x + |x - a| = b$ where a and b are constants.
Which of the following values of a and b will satisfy the equation when the solution of the equation is $x = 13$?

a. $a = 7, b = 22$
b. $a = 4, b = 24$
c. $a = 4, b = 25$
d. $a = 6, b = 22$
e. $a = 4, b = 22$

ANSWER: e
POINTS: 1
REFERENCES: 1.6.127
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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33. Find all real solutions of the equation $x^4 - 16 = 0$.

a. $x = -2, x = 2$
b. $x = 3$
c. $x = -3, x = 3$
d. $x = 2$
e. $x = -2$

ANSWER: a
POINTS: 1
REFERENCES: 1.6.7
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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34. Find all solutions of the following equation.

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Section 1.6 - Other Types of Equations

$252x^3 + 216x^2 - 7x - 6 = 0$

a. $x = -\frac{1}{7},\ x = \frac{1}{7}, x = \frac{6}{7}$

b. $x = -\frac{1}{7},\ x = \frac{1}{7}, x = -\frac{7}{6}$

c. $x = \frac{1}{6},\ x = -\frac{1}{6}, x = -\frac{1}{7}$

d. $x = \frac{1}{6},\ x = -\frac{1}{6}, x = -\frac{7}{6}$

e. $x = \frac{1}{6},\ x = -\frac{1}{6}, x = -\frac{6}{7}$

ANSWER: e
POINTS: 1
REFERENCES: 1.6.11
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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35. Find all solutions of the equation $4x^4 - 257x^2 + 64 = 0$.

a. $x = \frac{1}{2},\ x = 8$

b. $x = -\frac{1}{8},\ x = \frac{1}{2},\ x = -2,\ x = -8$

c. $x = -\frac{1}{8},\ x = \frac{1}{8},\ x = -8,\ x = 8$

d. $x = -\frac{1}{2},\ x = \frac{1}{2},\ x = -2,\ x = 2$

e. $x = -\frac{1}{2},\ x = \frac{1}{2},\ x = -8,\ x = 8$

ANSWER: e
POINTS: 1
REFERENCES: 1.6.12
QUESTION TYPE: Multi-Mode (Multiple choice)
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Section 1.6 - Other Types of Equations

36. Find all solutions of the following equation.

$\sqrt{10-x}-7=0$

a. $x=39$
b. $x=-3$
c. $x=3$
d. $x=-39$
e. $x=59$

ANSWER: d
POINTS: 1
REFERENCES: 1.6.38
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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37. Find all solutions of the following equation.

$\sqrt[3]{1+5x}+3=0$

a. $x=-28$
b. $x=-\frac{28}{5}$
c. $x=-\frac{27}{5}$
d. $x=-\frac{4}{5}$
e. $x=\frac{8}{5}$

ANSWER: b
POINTS: 1
REFERENCES: 1.6.40
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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38. Find all solutions of the following equation.

$x-\sqrt{14x+84}=-6$

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a. $x = 8, \quad x = -6$
b. $x = -8, \quad x = 6$
c. $x = -14, \quad x = 14$
d. $x = -6$
e. $x = 8$

ANSWER: a
POINTS: 1
REFERENCES: 1.6.42
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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39. Find all solutions of the following equation.

$$\sqrt{-3x-3} = \sqrt{-3x-1}$$

a. $x = \frac{2}{3}$
b. $x = -1$
c. No solution
d. $x = -2$
e. $x = -3$

ANSWER: c
POINTS: 1
REFERENCES: 1.6.43
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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40. Find all solutions of the following equation.

$$\sqrt[3]{(x-10)^2} - 16 = 0$$

a. $x = 74, \quad x = -74$
b. No solution
c. $x = 74$

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d. $x = -\frac{32}{5}$

e. $x = 74, \quad x = -54$

ANSWER: e
POINTS: 1
REFERENCES: 1.6.51
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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41. Find all solutions of the following equation.

$$\frac{-8}{-8x+5} - \frac{5}{-5x+8} = 1$$

a. No solution

b. $x = -1, \quad x = -\frac{49}{40}$

c. $x = 1$

d. $x = 1, \quad x = \frac{49}{40}$

e. $x = 1, \quad x = \frac{129}{40}$

ANSWER: e
POINTS: 1
REFERENCES: 1.6.66
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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42. Find all solutions of $x^4 - 6x^3 + x - 6 = 0$.

a. $x = 1, x = \frac{-1 \pm \sqrt{3}\,i}{2}$

b. $x = 6, x = -1, x = \frac{1 \pm \sqrt{3}\,i}{2}$

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c. $x = -6, x = 1, x = \frac{1 \pm \sqrt{3}i}{2}$

d. $x = -6, x = 1, x = \frac{1 \pm \sqrt{2}i}{2}$

e. $x = 6, x = -1$

ANSWER: b
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 1-14
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.084 - Solve polynomial equation
TOPICS: 2.5
KEYWORDS: 2.5.4
NOTES: Skill
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43. Find all solutions of $\frac{1}{x^2} + \frac{6}{x} + 8 = 0$.

a. $x = -4, \ x = -2$

b. $x = -4, \ x = 2$

c. $x = -\frac{1}{4}, \ x = -\frac{1}{2}$

d. $x = \frac{1}{6}, \ x = -\frac{1}{2}$

e. $x = \frac{1}{6}, \ x = \frac{1}{2}$

ANSWER: c
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 1-14
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.085 - Solve equation involving fractions
TOPICS: 2.5
KEYWORDS: 2.5.11
NOTES: Skill
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Section 1.6 - Other Types of Equations

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44. Find all solutions of the following equation algebraically.

$$-20\left(\frac{w}{w-1}\right)^2 - 27\left(\frac{w}{w-1}\right) - 9 = 0$$

a. $w = -\frac{3}{5}, w = -\frac{3}{4}$

b. $w = -5, w = -3$

c. $w = -\frac{3}{8}, w = -\frac{3}{7}$

d. $w = \frac{3}{8}, w = \frac{3}{7}$

e. $w = 3, w = 4$

ANSWER: d
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 1-14
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.086 - Solve equation for all solutions
TOPICS: 2.5
KEYWORDS: 2.5.14
NOTES: Skill
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45. Find the x-intercepts of the graph of the equation $y = 20x^4 + 22x^3 - 70x^2$.

a. x-intercepts: $\left(\frac{5}{2}, 0\right), \left(-\frac{5}{2}, 0\right), \left(\frac{7}{5}, 0\right)$

b. x-intercepts: $\left(-\frac{7}{5}, 0\right), \left(-\frac{5}{2}, 0\right), \left(\frac{7}{5}, 0\right)$

c. x-intercepts: $(0, 0), \left(-\frac{5}{2}, 0\right), \left(-\frac{7}{5}, 0\right)$

d. x-intercepts: $(0, 0), \left(-\frac{5}{2}, 0\right), \left(\frac{7}{5}, 0\right)$

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e. x-intercepts: $(0,\ 0),\ \left(\frac{5}{2},\ 0\right),\ \left(\frac{7}{5},\ 0\right)$

ANSWER: d
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 15-18
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.087 - Solve for the x-intercepts of the graph of an equation
TOPICS: 2.5
KEYWORDS: 2.5.16c
NOTES: Skill
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46. In the following equation set $y = 0$ and solve.

$y = x^4 - 29x^2 + 100$

a. $x = -25, x = -4$
b. $x = 1, x = 10$
c. $x = \pm 2, x = \pm 5$
d. $x = -4, x = 10$
e. $x = \pm 10, x = \pm 5$

ANSWER: c
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 15-18
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.088 - Solve equation in quadratic form
TOPICS: 2.5
KEYWORDS: 2.5.18c
NOTES: Skill
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47. Find all solutions of the following equation algebraically.

$\sqrt[3]{2x + 9} - 5 = 0$

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a. $x = \frac{9}{2}$

b. $x = 58$

c. $x = \frac{1}{3}$

d. $x = -\frac{4}{9}$

e. $x = 6$

ANSWER: b
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 19-48
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.089 - Solve radical equations
TOPICS: 2.5
KEYWORDS: 2.5.24
NOTES: Skill
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48. Find all solutions of $\sqrt{x} - \sqrt{x - 11} = 1$.

a. $x = 6$

b. $x = \sqrt{6}$

c. $x = 12$

d. $x = 36$

e. $x = -6$

ANSWER: d
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 19-48
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.089 - Solve radical equations
TOPICS: 2.5
KEYWORDS: 2.5.35
NOTES: Skill
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Section 1.6 - Other Types of Equations

49. Find all solutions of the following equation algebraically.

$3\sqrt{x-8}-\sqrt{x-7}=0$

a. $x=\frac{17}{11}$

b. $x=\frac{65}{8}$

c. $x=-\frac{10}{11}$

d. $x=\frac{17}{2}$

e. $x=\frac{1}{8}$

ANSWER: b
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 19-48
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.089 - Solve radical equations
TOPICS: 2.5
KEYWORDS: 2.5.37
NOTES: Skill
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50. Find all solutions of the following equation algebraically.

$11\sqrt{x-3}-\sqrt{9x-203}=48$

a. $x=6$

b. $x=-4, x=7$

c. $x=7$

d. $x=28$

e. $x=6, x=5$

ANSWER: d
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 19-48

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Section 1.6 - Other Types of Equations

QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.089 - Solve radical equations
TOPICS: 2.5
KEYWORDS: 2.5.38
NOTES: Skill
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51. Find all solutions of the following equation algebraically.

$4m^{2/3} + 20m^{1/3} + 25 = 0$

a. $m = -\frac{5}{2}$

b. $m = \frac{25}{4}$

c. $m = -\frac{125}{8}$

d. $m = -\frac{25}{4}$

e. $m = \frac{5}{2}$

ANSWER: c
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 19-48
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.090 - Solve an equation with rational exponents
TOPICS: 2.5
KEYWORDS: 2.5.40
NOTES: Skill
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52. Find all solutions of the following equation algebraically.

$(x - 7)^{2/3} = 9$

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Section 1.6 - Other Types of Equations

a. $x = \sqrt[3]{9} + 7$

b. $x = 16$

c. $x = \sqrt[3]{9} - 49$

d. $x = \frac{27}{49}$

e. $x = 34, x = -20$

ANSWER: e
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 19-48
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.090 - Solve an equation with rational exponents
TOPICS: 2.5
KEYWORDS: 2.5.44
NOTES: Skill
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53. Find all solutions of $(x^2 + 9)^{3/2} = 125$.

a. $x = -4, x = 4$

b. $x = \sqrt[3]{9}$

c. $x = -4$

d. $x = 5$

e. $x = -\sqrt[3]{9}, x = \sqrt[3]{9}$

ANSWER: a
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 19-48
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.090 - Solve an equation with rational exponents
TOPICS: 2.5
KEYWORDS: 2.5.46
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Section 1.6 - Other Types of Equations

54. Find all solutions of the following equation algebraically.

$9x^2(x+4)^{1/3}+15x(x+4)^{4/3}=0$

a. $x=0, x=-4$

b. $x=0, x=-\frac{5}{2}, x=-4$

c. $x=0, x=4, x=\frac{4}{3}$

d. $x=-4, x=4, x=\frac{3}{4}$

e. $x=-3, x=-1, x=\frac{4}{3}$

ANSWER: b
POINTS: 1
DIFFICULTY: Difficult
REFERENCES: 19-48
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.090 - Solve an equation with rational exponents
TOPICS: 2.5
KEYWORDS: 2.5.48
NOTES: Skill
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55. Find the x-intercepts of the graph of the equation $y=4x+\sqrt{6-95x}$.

a. x-intercept: $(6, 0)$

b. x-intercepts: $(-6, 0), \left(\frac{1}{16}, 0\right)$

c. x-intercept: $(-6, 0)$

d. x-intercepts: $(7, 0), \left(\frac{1}{17}, 0\right)$

e. x-intercepts: $(7, 0), \left(\frac{1}{15}, 0\right)$

ANSWER: c
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 49-52

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Section 1.6 - Other Types of Equations

QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.087 - Solve for the x-intercepts of the graph of an equation
TOPICS: 2.5
KEYWORDS: 2.5.51c
NOTES: Skill
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56. Set $y = 0$ and solve the resulting equation.

$$y = 3\sqrt{x} - \frac{30}{\sqrt{x}} - 9$$

a. $x = -2, x = 25$
b. $x = 10$
c. $x = -2, x = 10$
d. $x = 25$
e. $x = 3$

ANSWER: d
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 49-52
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.089 - Solve radical equations
TOPICS: 2.5
KEYWORDS: 2.5.52b
NOTES: Skill
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57. Find all solutions of $-3x - 11 = -\frac{4}{x}$.

a. $x = \frac{4}{3}, x = -4$

b. $x = -\frac{3}{4}, x = 3$

c. $x = \frac{1}{3}, x = -4$

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d. $x = \frac{3}{4}, x = 4$

e. $x = -\frac{1}{4}, x = 3$

ANSWER: c
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 53-66
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.085 - Solve equation involving fractions
TOPICS: 2.5
KEYWORDS: 2.5.54
NOTES: Skill
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58. Find all solutions of the following equation.

$$\frac{24}{2x+3} + \frac{102}{5x-3} = 18$$

a. $x = 2$

b. $x = -\frac{11}{10}$

c. $x = -\frac{11}{10}, x = 2$

d. $x = -\frac{3}{10}, x = 8$

e. $x = 8$

ANSWER: c
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 53-66
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.091 - Solve a rational equation
TOPICS: 2.5
KEYWORDS: 2.5.56
NOTES: Skill
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59. Find all solutions of the following equation.

$$\frac{x}{x^2-16}+\frac{10}{x+4}=1$$

a. $x=-4, x=4$
b. $x=\frac{5}{8}, x=\frac{2}{5}$
c. $x=3, x=4$
d. $x=3, x=8$
e. $x=8$

ANSWER: d
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 53-66
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.085 - Solve equation involving fractions
TOPICS: 2.5
KEYWORDS: 2.5.59
NOTES: Skill
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60. Find all solutions of $|-3x-4|=6$.

a. $x=-\frac{2}{3}, x=\frac{10}{3}$
b. $x=-\frac{10}{3}, x=\frac{2}{3}$
c. $x=-\frac{10}{3}$
d. $x=-\frac{7}{6}, x=\frac{9}{4}$
e. $x=-\frac{2}{3}$

ANSWER: b
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 53-66

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Section 1.6 - Other Types of Equations

QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.092 - Solve absolute value equations
TOPICS: 2.5
KEYWORDS: 2.5.62
NOTES: Skill
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61. Find all solutions of the following equation.

$|x-4| = x^2 - 4x$

a. $x = 0, x = 1$
b. $x = 0, x = 4$
c. $x = -1, x = 4$
d. $x = -1, x = 0$
e. $x = -1$

ANSWER: c
POINTS: 1
DIFFICULTY: Difficult
REFERENCES: 53-66
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.093 - Solve equation involving absolute value
TOPICS: 2.5
KEYWORDS: 2.5.64
NOTES: Skill
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62. Find all solutions of the following equation.

$x - 5 = |x^2 - 5x|$

a. $x = 1, x = 5$
b. $x = -5, x = 5$
c. $x = -5, x = 0$
d. $x = 5$
e. $x = 0, x = 1$

ANSWER: d

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Section 1.6 - Other Types of Equations

POINTS: 1
DIFFICULTY: Difficult
REFERENCES: 53-66
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.093 - Solve equation involving absolute value
TOPICS: 2.5
KEYWORDS: 2.5.66
NOTES: Skill
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63. Set $y = 0$ and solve the resulting equation.

$$y = x + 10 + \frac{16}{x+2}$$

a. $x = -10$
b. $x = -10, x = 10$
c. $x = -6, x = 6$
d. $x = -6$
e. $x = 10$

ANSWER: d
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 67-70
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.094 - Solve equation involving rational expression
TOPICS: 2.5
KEYWORDS: 2.5.68c
NOTES: Skill
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64. Find the x-intercepts of the graph of the equation $y = |8x + 9| - 4$.

a. x-intercepts: $\left(\frac{5}{8}, 0\right), \left(\frac{13}{8}, 0\right)$

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b. x-intercepts: $\left(-\frac{5}{8}, 0\right), \left(\frac{13}{8}, 0\right)$

c. x-intercepts: $\left(-\frac{5}{8}, 0\right), \left(\frac{5}{8}, 0\right)$

d. x-intercepts: $\left(\frac{13}{8}, 0\right), \left(-\frac{13}{8}, 0\right)$

e. x-intercepts: $\left(-\frac{5}{8}, 0\right), \left(-\frac{13}{8}, 0\right)$

ANSWER: e
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 67-70
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.087 - Solve for the x-intercepts of the graph of an equation
TOPICS: 2.5
KEYWORDS: 2.5.70c
NOTES: Skill
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65. Find an equation that has $x = i, -i$, 4, and 2 as solutions.

a. $x^4 - 6x^3 + 9x^2 - 6x + 8 = 0$

b. $x^4 - 6x^3 + 7x^2 - 6x + 8 = 0$

c. $x^4 - 2x^3 + 9x^2 - 6x + 8 = 0$

d. $x^4 - 2x^3 + 7x^2 - 6x + 8 = 0$

e. $x^4 - 6x^3 + 9x^2 - 2x + 8 = 0$

ANSWER: a
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 87-92
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.095 - Write a possible equation given roots
TOPICS: 2.5
KEYWORDS: 2.5.92

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Section 1.6 - Other Types of Equations

NOTES: Skill
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66. Solve the equation.

$2x + 1 = 6x - 31$

a. $x = 8$
b. $x = 10$
c. $x = 11$
d. $x = 9$
e. $x = 7$

ANSWER: a
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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67. Solve the equation.

$\frac{x}{5} - \frac{x}{15} = 10$

a. $x = 150$
b. $x = 25$
c. $x = 8$
d. $x = 15$
e. $x = 75$

ANSWER: e
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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68. Solve the following equation (if possible).

$\frac{1}{x-5} + \frac{1}{x+5} = \frac{18}{x^2-25}$

a. $x = 45$
b. $x = 9$
c. $x = 18$

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d. $x = 4.5$
e. No solution

ANSWER: b
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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69. Solve the following equation (if possible).

$$\frac{2}{x-3} + \frac{3}{x+5} = \frac{16}{x^2+2x-15}$$

a. $x = 3$
b. $x = -5$
c. $x = -3$
d. $x = 5$
e. No solution

ANSWER: e
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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70. Determine any point(s) of intersection of the following equations algebraically.

$$7x = y - 2$$
$$y - 4x = -10$$

a. (–3, –19)
b. (–6, –40)
c. (–5, –33)
d. (–4, –26)
e. (–2, –12)

ANSWER: d
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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Section 1.6 - Other Types of Equations

71. Determine any point(s) of intersection of the following equations algebraically.

$30 = 23x - y$

$-x^2 + y = 12x$

a. (7, 133)
(6, 108)

b. (3, 39)
(2, 16)

c. (5, 85)
(4, 62)

d. (4, 62)
(3, 39)

e. (6, 108)
(5, 85)

ANSWER: e
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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72. Find the value of x that solves the equation.

$$\frac{\sqrt{x+7}}{6} + 5 = 6$$

a. $x = 13$
b. $x = 22$
c. $x = 29$
d. $x = -1$
e. $x = 43$

ANSWER: c
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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73. Find the values of x that solve the equation.

$(11x - 4)^2 = 9$

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Section 1.6 - Other Types of Equations

a. $x = \frac{7}{11}, \quad x = -\frac{7}{11}$

b. $x = \frac{7}{11}, \quad x = \frac{1}{11}$

c. $x = 7, \quad x = -7$

d. $x = -\frac{1}{11}, \quad x = -\frac{7}{11}$

e. $x = -\frac{1}{11}, \quad x = \frac{1}{11}$

ANSWER: b
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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74. Find the values of x that solve the equation.

$|13x + 7| = 8$

a. $x = \frac{15}{13}, \quad x = -\frac{15}{13}$

b. $x = \frac{15}{13}, \quad x = -\frac{1}{13}$

c. $x = 15, \quad x = -15$

d. $x = \frac{1}{13}, \quad x = -\frac{15}{13}$

e. $x = \frac{1}{13}, \quad x = -\frac{1}{13}$

ANSWER: d
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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75. Find all solutions of the equation.

$x^3 + 2x^2 - 6x - 12 = 0$

a. $x = \sqrt{6}, x = -\sqrt{6}, x = 2$

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b. $x = \sqrt{5}, x = -\sqrt{5}, x = -2$

c. $x = \sqrt{6}, x = -\sqrt{5}, x = 2$

d. $x = \sqrt{6}, x = -\sqrt{6}, x = -2$

e. $x = \sqrt{5}, x = -\sqrt{5}, x = 2$

ANSWER: d
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:16 PM
DATE MODIFIED: 5/13/2021 6:22 AM

76. Find all solutions of the equation.

$x^4 - 9x^2 + 14 = 0$

a. $x = \pm\sqrt{5}, x = \pm\sqrt{6}$

b. $x = \pm\sqrt{2}, x = \pm\sqrt{5}$

c. $x = \pm\sqrt{2}, x = \pm\sqrt{7}$

d. $x = \pm\sqrt{2}, x = \pm\sqrt{6}$

e. $x = \pm\sqrt{7}, x = \pm\sqrt{5}$

ANSWER: c
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:16 PM
DATE MODIFIED: 5/13/2021 6:24 AM

77. Find all solutions of the equation.

$\sqrt{x+10} - 3x = 2$

Round all answers to the nearest hundredth.

a. $x = -1.84, x = 0.62$

b. $x = -1.63, x = 0.41$

c. $x = 0.41, x = 0.62$

d. $x = 0.41$

e. $x = 0.62$

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Section 1.6 - Other Types of Equations

ANSWER: d
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:16 PM
DATE MODIFIED: 5/13/2021 6:27 AM

78. Find all solutions of the equation.

$$-\frac{6}{x}-\frac{27}{x^2}=-1$$

a. $x=-9, x=-3$
b. $x=9, x=-3$
c. $x=-9, x=3$
d. $x=9, x=3$
e. None of the above

ANSWER: b
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:16 PM
DATE MODIFIED: 5/13/2021 6:29 AM

79. The population of a small town can be modelled by the equation $P = 31.2t + 12{,}433$ with $0 \le t \le 40$, where $t = 0$ corresponds to 1970. According to this model, when did the population reach 12,901?

a. 1988
b. 1986
c. 1985
d. 1984
e. 1987

ANSWER: c
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:16 PM
DATE MODIFIED: 5/13/2021 6:31 AM

80. The average salary (in thousands of dollars) at a certain company for the first ten years of its existence can be approximated by the model $S = 0.2t^2 + 2.1t + 32.5, \quad 0 \le t \le 10$. How many years did it take for the average salary to

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reach $37,500? Round the answer to the nearest hundredth of a year.

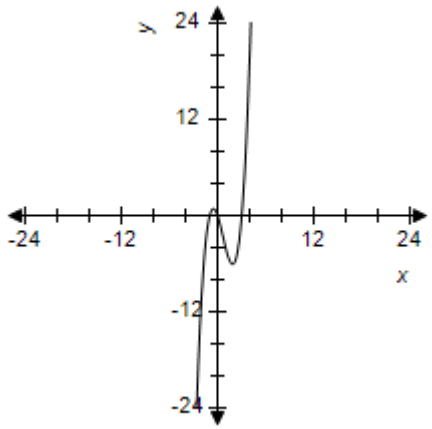
a. 427.37
b. 427.30
c. 427.48
d. 427.61
e. 427.96

ANSWER: d
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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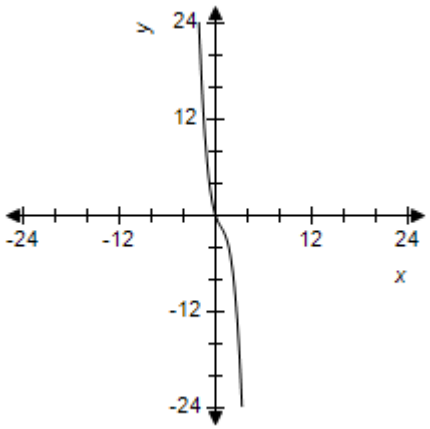
81. Use a graphing utility to graph the equation.

$y = x^3 - 2x^2 - 3x$

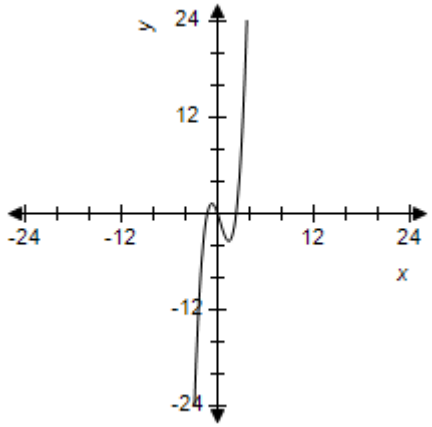
a.



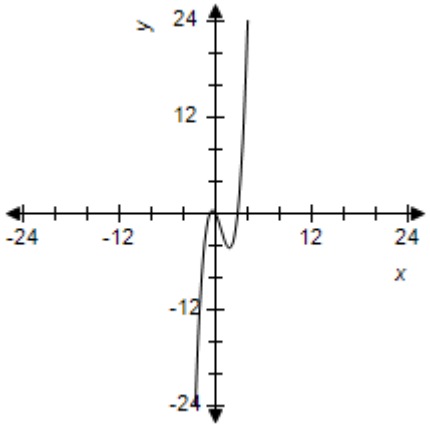
b.



c.



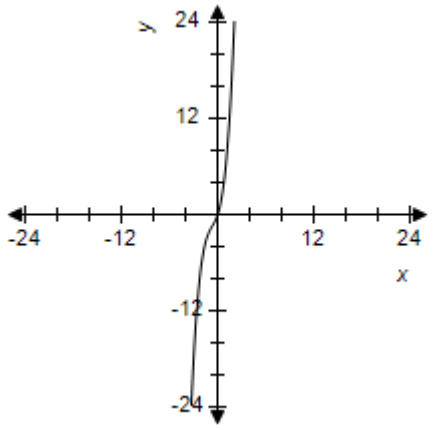
d.



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e.

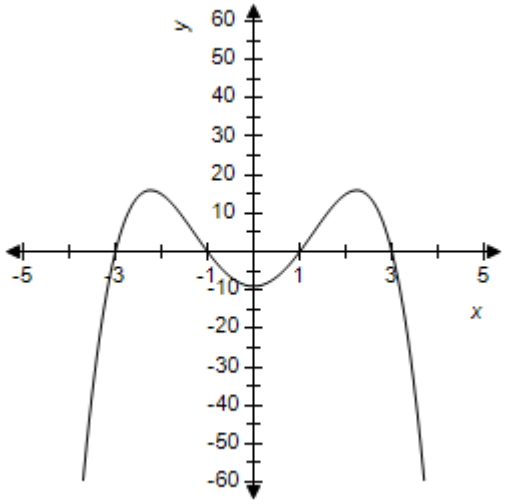


ANSWER: a
POINTS: 1
REFERENCES: 1.6.31
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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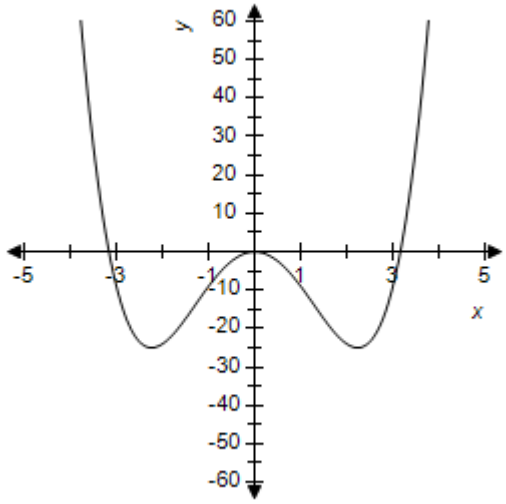
82. Use a graphing utility to graph the equation.

$y = x^4 - 10x^2 + 9$

a.



b.

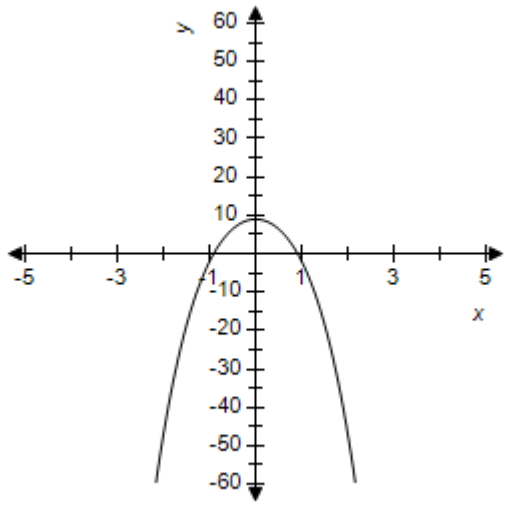


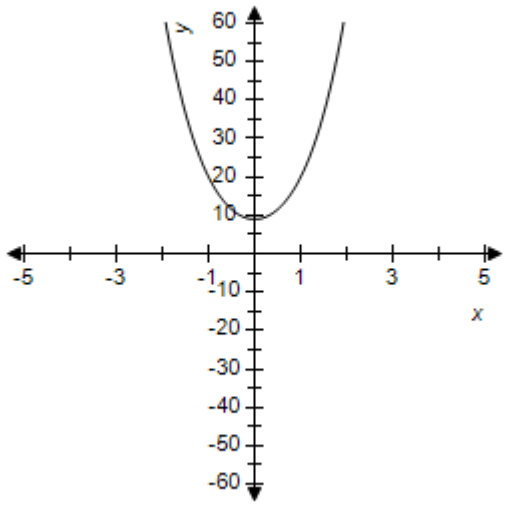
c.

d.

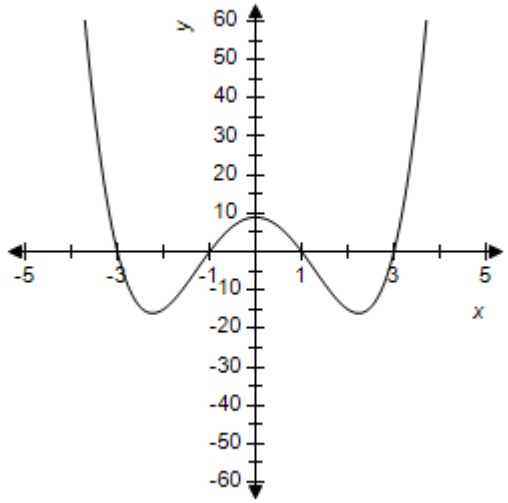
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e.



ANSWER: e
POINTS: 1
REFERENCES: 1.6.33
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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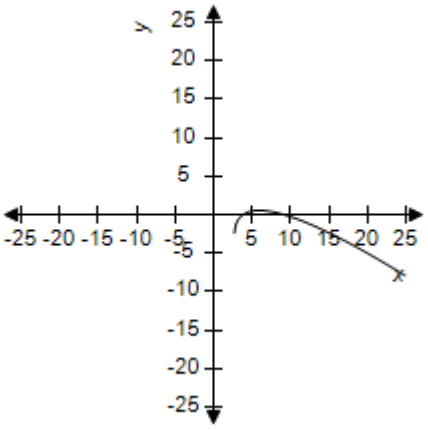
83. Use a graphing utility to graph the equation.

$y = \sqrt{13x - 35} - x$

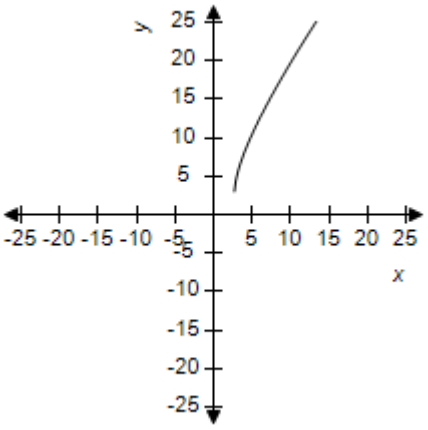
a. b.

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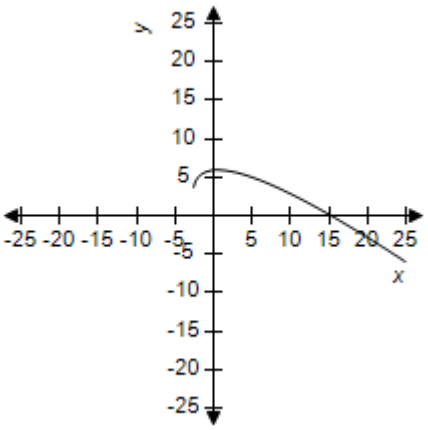
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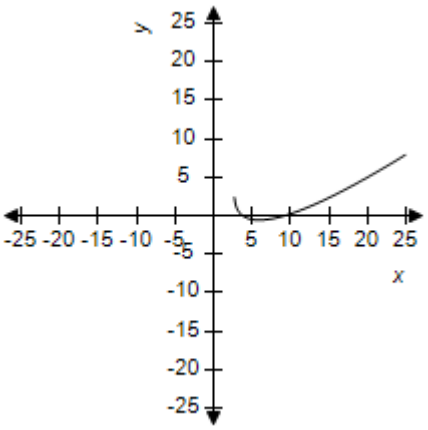
c.

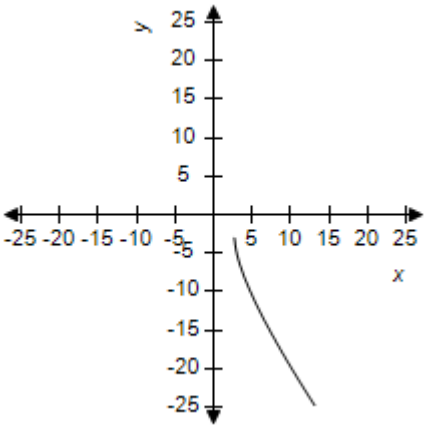


d.



e.





ANSWER: a
POINTS: 1
REFERENCES: 1.6.59
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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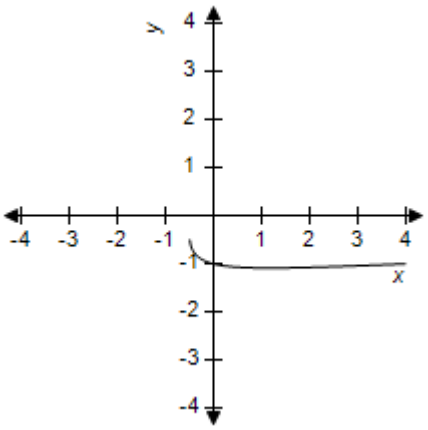
Section 1.6 - Other Types of Equations

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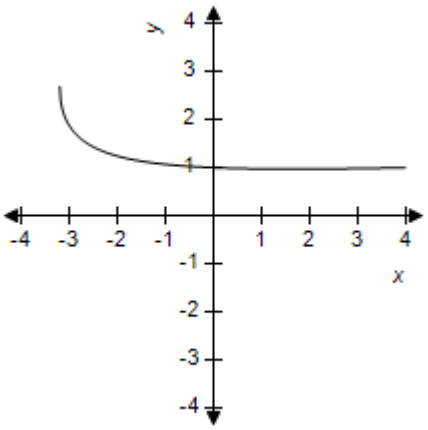
84. Use a graphing utility to graph the equation.

$y = \sqrt{3x+4} - \sqrt{2x+1} - 2$

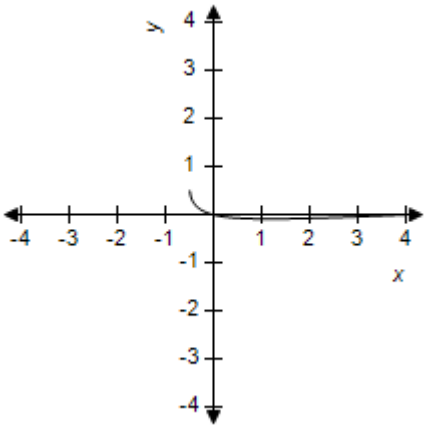
a.



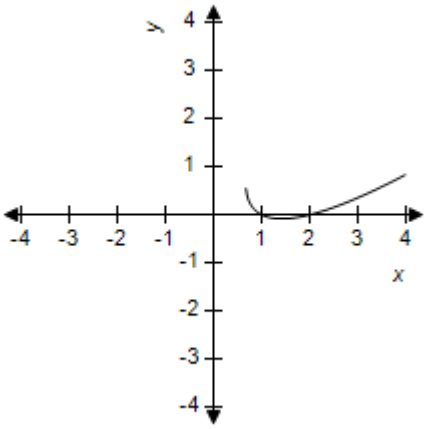
b.



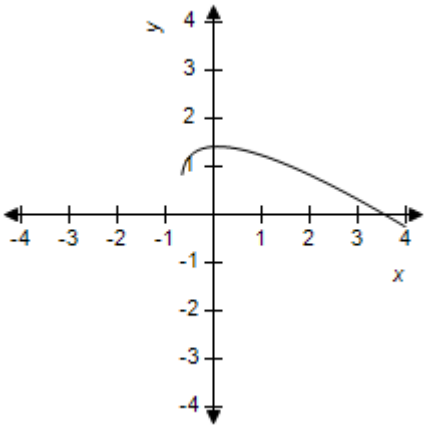
c.



d.



e.



ANSWER: a

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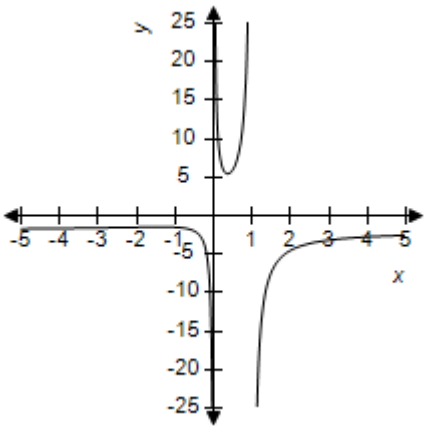
Section 1.6 - Other Types of Equations

POINTS:	1
REFERENCES:	1.6.61
QUESTION TYPE:	Multi-Mode (Multiple choice)
HAS VARIABLES:	True
STUDENT ENTRY MODE:	Basic
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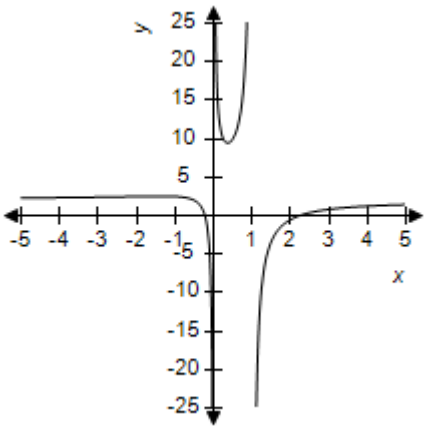
85. Use a graphing utility to graph the equation.

$$y = \frac{1}{x} - \frac{3}{x - 1} - 2$$

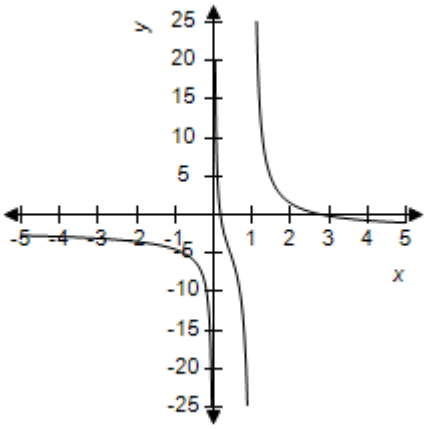
a.



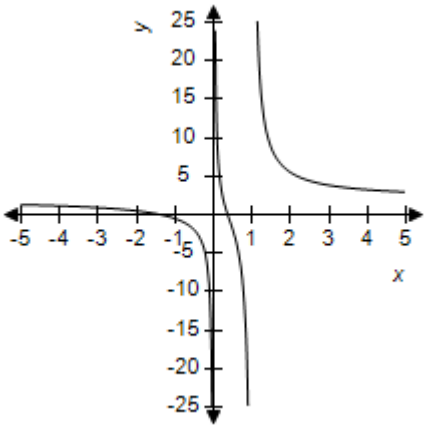
b.



c.



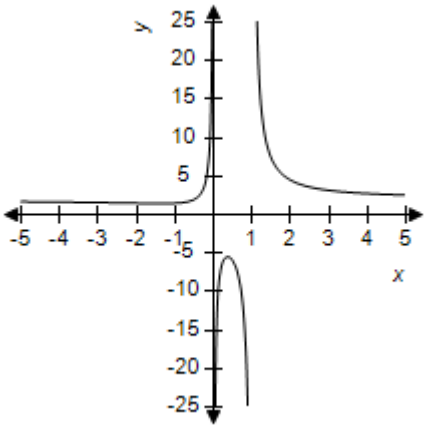
d.



e.

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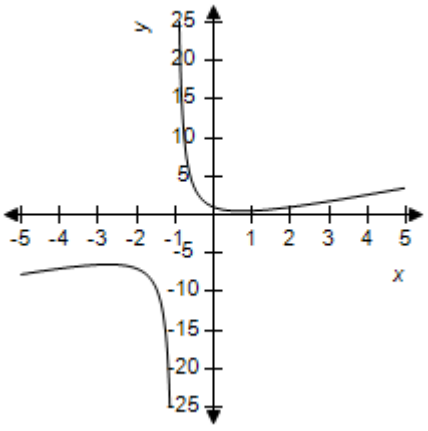


ANSWER: a
POINTS: 1
REFERENCES: 1.6.77
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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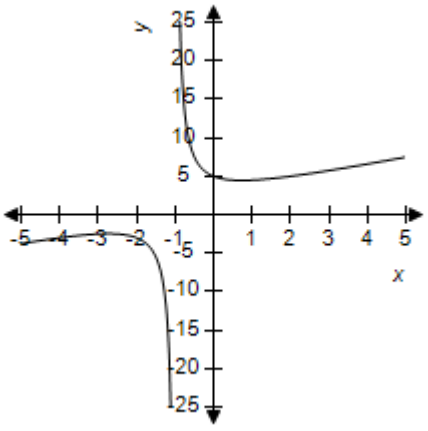
86. Use a graphing utility to graph the equation.

$$y = x + \frac{3}{x + 1} - 2$$

a.



b.



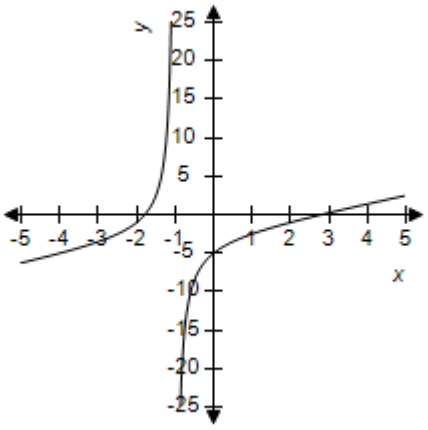
c.

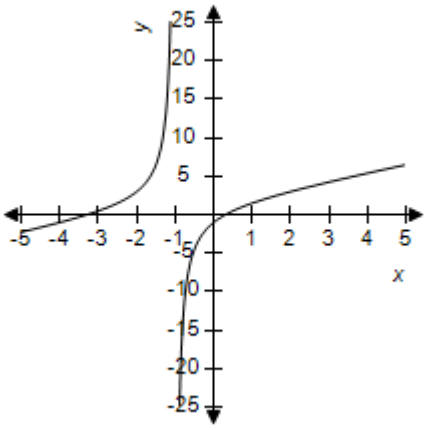
d.

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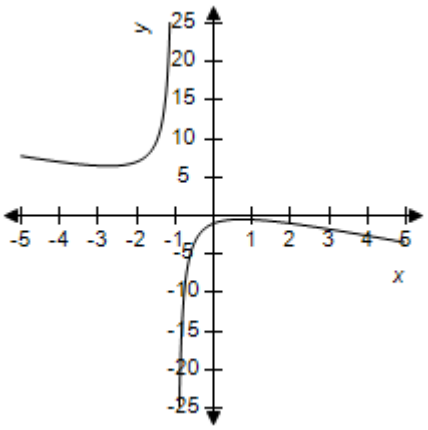
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Section 1.6 - Other Types of Equations





e.



ANSWER: a
POINTS: 1
REFERENCES: 1.6.78
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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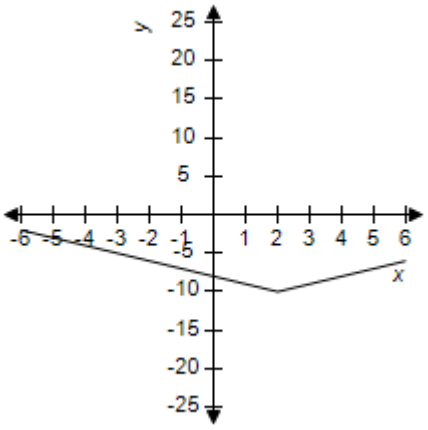
87. Use a graphing utility to graph the equation.

$y = |x - 2| - 10$

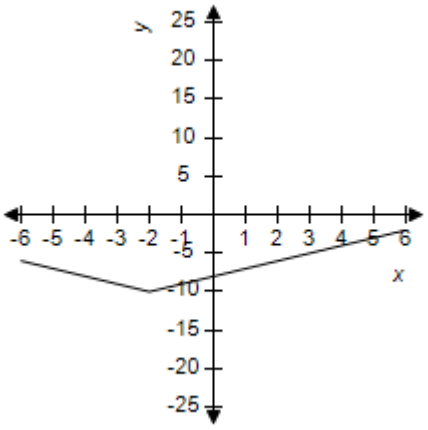
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Section 1.6 - Other Types of Equations

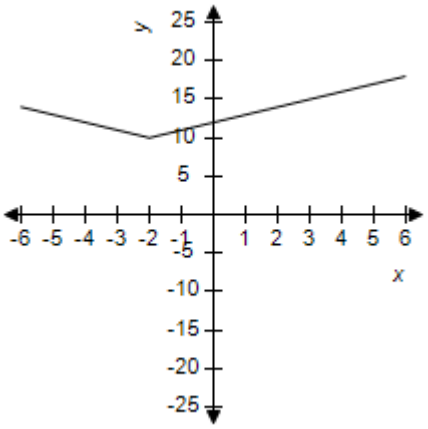
a.



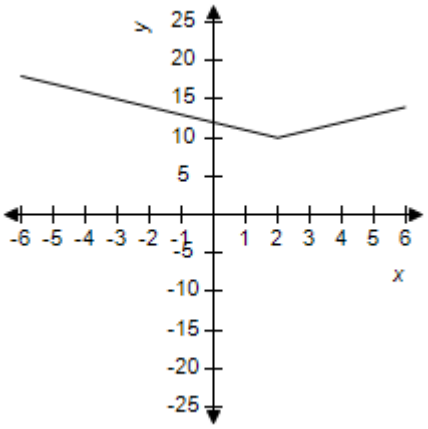
b.



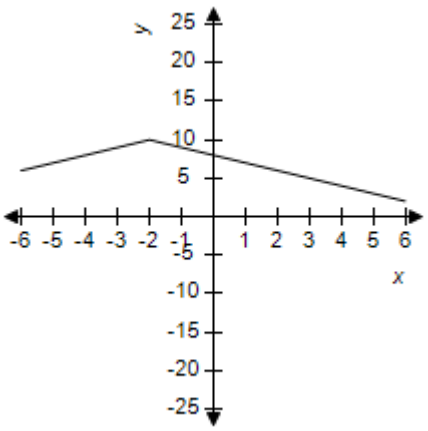
c.



d.



e.



ANSWER: a
POINTS: 1
REFERENCES: 1.6.80
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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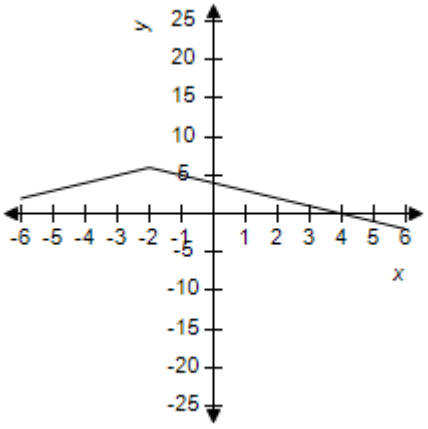
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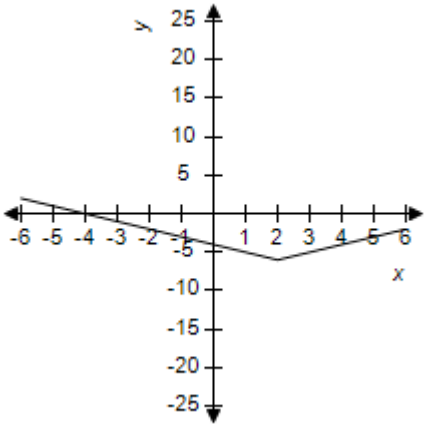
88. Use a graphing utility to graph the equation.

$y = |x + 2| - 6$

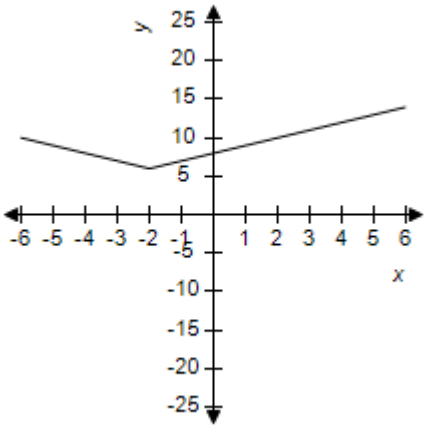
a.



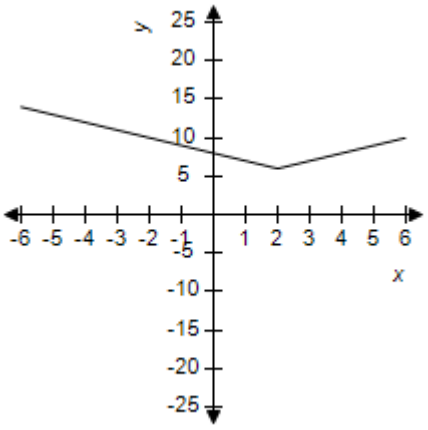
b.



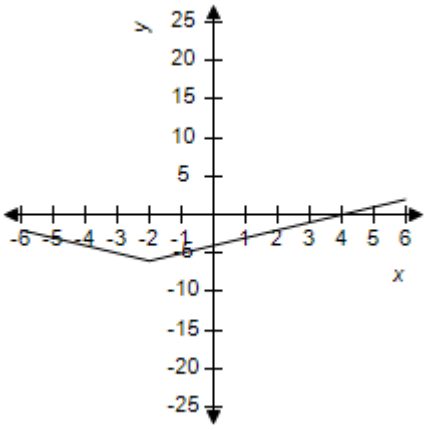
c.



d.



e.



ANSWER: e
POINTS: 1
REFERENCES: 1.6.79
QUESTION TYPE: Multi-Mode (Multiple choice)

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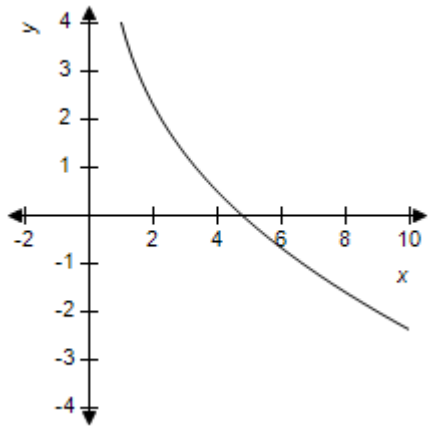
Section 1.6 - Other Types of Equations

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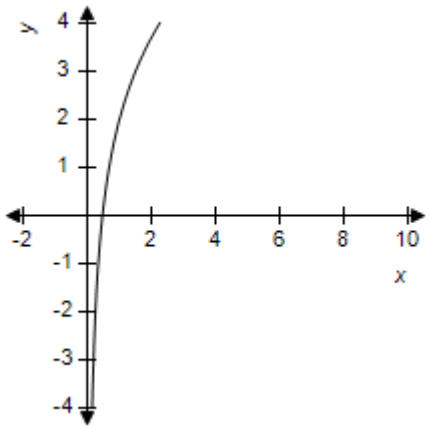
89. Select the correct graph of the equation.

$$y = 2\sqrt{x} - \frac{3}{\sqrt{x}} - 3$$

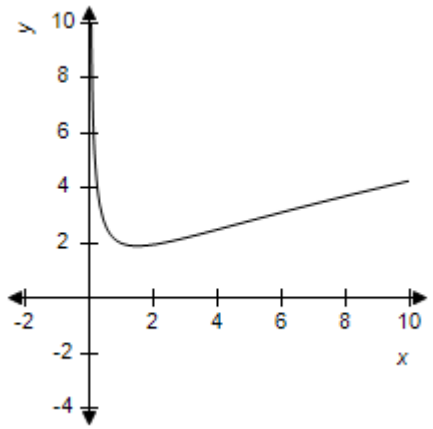
a.



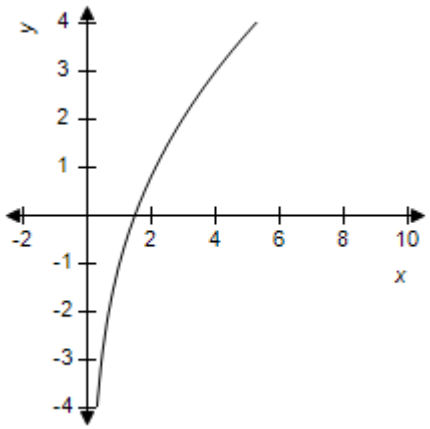
b.



c.



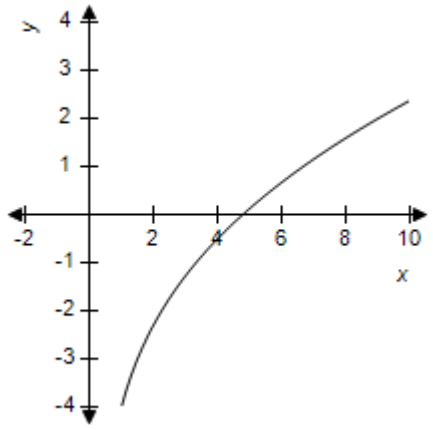
d.



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e.



ANSWER: e
POINTS: 1
REFERENCES: 1.6.62
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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90. Use a graphing utility to graph the following equation and approximate any x-intercepts of the graph. Round the answer to the nearest whole number.

$$y = \sqrt{x} - \frac{13.3}{\sqrt{x}} + 2.3$$

a. $x \approx -5, x \approx 25$
b. $x \approx 36$
c. $x \approx -5, x \approx 36$
d. $x \approx 7$
e. $x \approx 8$

ANSWER: d
POINTS: 1
REFERENCES: 49-52
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:16 PM
DATE MODIFIED: 5/13/2021 9:23 AM

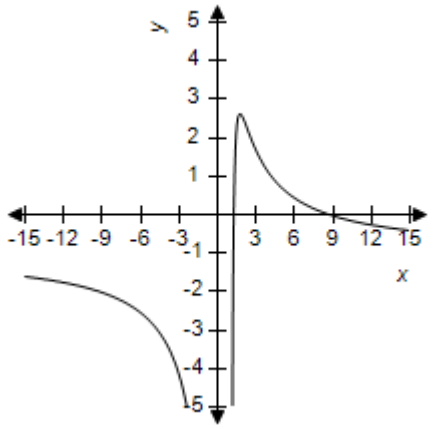
91. Graph the equation and approximate the x-intercepts to the nearest hundredth.

$$y = \frac{11}{x} - \frac{2}{x - 1} - 1$$

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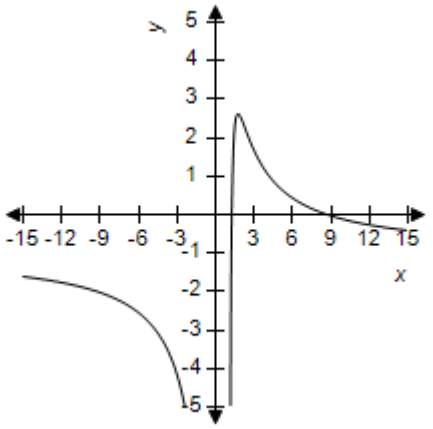
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a.



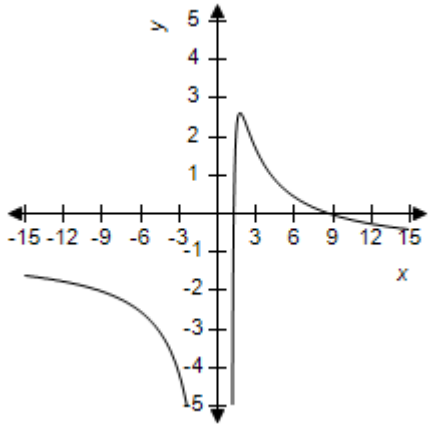
(8.55, 0), (1.45, 0)

b.



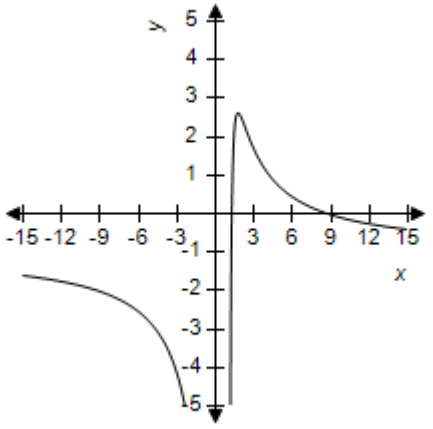
(8.27, 0), (1.73, 0)

c.



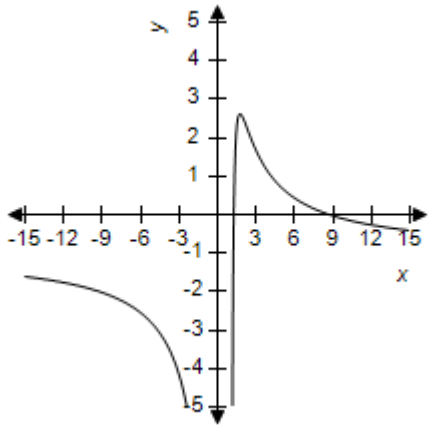
(8.87, 0), (1.13, 0)

d.



(8.74, 0), (1.26, 0)

e.



(8.39, 0), (1.61, 0)

ANSWER: d
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True

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Section 1.6 - Other Types of Equations

STUDENT ENTRY MODE: Basic
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92. Find the x- and y-intercepts of the graph of the equation.

$$\frac{x}{7} - 2 - 6y = 0$$

a. x-intercept: $(-14, 0)$; y-intercept: $(0, \frac{1}{3})$
b. x-intercept: $(\frac{2}{7}, 0)$; y-intercept: $(0, -\frac{1}{5})$
c. x-intercept: $(-\frac{2}{7}, 0)$; y-intercept: $(0, 7)$
d. x-intercept: $(14, 0)$; y-intercept: $(0, -\frac{1}{3})$
e. x-intercept: $(7, 0)$; y-intercept: $(0, -14)$

ANSWER: d
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 9/23/2014 6:43 AM
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93. Which of the following is a zero of the given function?

$$f(x) = \frac{x + 8}{5} - \frac{x + 8}{9} - 6$$

$x = -\frac{79}{2}, x = \frac{151}{2}, x = 17, x = \frac{119}{2}$

a. $x = -\frac{79}{2}$
b. $x = \frac{151}{2}$
c. $x = 17$
d. $x = \frac{119}{2}$
e. None of these

ANSWER: d
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 9/23/2014 7:47 AM
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94. Which of the following is a zero of the given function?

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Section 1.6 - Other Types of Equations

$$f(x) = x + 8 + \frac{15}{x}$$

$x = 3, x = -5, x = -2, x = 8$

a. $x = 3$
b. $x = -5$
c. $x = -2$
d. $x = 8$
e. none of these

ANSWER: b
POINTS: 1
REFERENCES: 15-20
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:16 PM
DATE MODIFIED: 9/23/2014 8:31 AM

95. Solve the following equation.

$10(x + 4) = -10(x + 9) + 210$

a. $x = \frac{43}{4}$
b. $x = 8$
c. $x = 4$
d. $x = -4$
e. $x = 17$

ANSWER: c
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 9/23/2014 8:36 AM
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96. Solve for x rounding your answer to the nearest thousandth.

$2.761 + 1.408(4.193x + 3.834) = 5.356x - 3$

a. –9.419
b. –20.373
c. –10.292
d. –0.991
e. 0.501

ANSWER: b
POINTS: 1

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Section 1.6 - Other Types of Equations

REFERENCES: 21-34
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:16 PM
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97. Solve the following equation.

$$\frac{x+8}{3} = \frac{x-6}{8}$$

a. $-\frac{14}{5}$
b. $-\frac{70}{11}$
c. -2
d. $-\frac{82}{5}$
e. $\frac{46}{11}$

ANSWER: d
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 9/23/2014 9:10 AM
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98. Solve the following equation.

$$\frac{x+1}{4} - \frac{x-1}{9} = 3$$

a. $\frac{103}{5}$
b. $\frac{106}{13}$
c. -2
d. $-\frac{10}{13}$
e. 19

ANSWER: e
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
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Section 1.6 - Other Types of Equations

99. Solve the following equation.

$(x + 20)^2 - 12(x - 12) = (x + 20)(x - 12)$

a. $-\frac{196}{5}$

b. -8

c. $-\frac{124}{5}$

d. $\frac{196}{3}$

e. $-\frac{4}{3}$

ANSWER: a
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 9/23/2014 10:14 AM
DATE MODIFIED: 9/23/2014 10:45 AM

100. Determine any point(s) of intersection between the following equations.

$y = 3 - x$

$y = \frac{6}{5} - \frac{11}{5}x$

a. $(-\frac{9}{16}, \frac{27}{16})$

b. $(\frac{1}{2}, \frac{5}{2})$

c. $(-\frac{3}{2}, \frac{9}{2})$

d. $(\frac{5}{2}, \frac{1}{2})$

e. $(\frac{21}{16}, \frac{27}{5})$

ANSWER: c
POINTS: 1
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
DATE CREATED: 9/23/2014 10:52 AM
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101. Determine any point(s) of intersection between the following equations.

$y = -x^2 + 4x + 1$

$y = -x^2 + 3x - 2$

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a. (3, 4)
b. (–5, –44), (3, 4)
c. (–2, –11), (5, –4)
d. (–3, –20)
e. (5, –4)

ANSWER: d
POINTS: 1
REFERENCES: 57-64
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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Section 1.7 - Linear Inequalities in One Variable

1. Select an inequality that represents the interval [0, 6).

a. $0 \leq x < 6$
b. $0 \leq x \leq 6$
c. $0 < x < 6$
d. $0 < x \leq 6$
e. $-6 \leq x < 0$

ANSWER: a
POINTS: 1
REFERENCES: 1.7.7
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:16 PM
DATE MODIFIED: 9/22/2014 4:45 AM

2. Select an inequality that represents the interval (-8, 6).

a. $-8 \leq x < 6$
b. $-8 \leq x \leq 6$
c. $-8 < x \leq 6$
d. $8 < x < 6$
e. $-8 < x < 6$

ANSWER: e
POINTS: 1
REFERENCES: 1.7.8
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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3. Select an inequality that represents the interval [-3, 2].

a. $-3 < x < 2$
b. $-3 \leq x < 2$
c. $-3 < x \leq 2$
d. $3 \leq x \leq 2$
e. $-3 \leq x \leq 2$

ANSWER: e
POINTS: 1
REFERENCES: 1.7.9
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic

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Section 1.7 - Linear Inequalities in One Variable

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4. Select an inequality that represents the interval $[-4, \infty)$.

a. $x \leq -4$
b. $x < -4$
c. $x > -4$
d. $x \geq -4$
e. $x \geq 4$

ANSWER: d
POINTS: 1
REFERENCES: 1.7.12
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:16 PM
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5. Determine whether $x = 9$ is in the solution set of the inequality $9x - 10 > 0$.

a. Yes
b. No

ANSWER: a
POINTS: 1
REFERENCES: 1.7.23
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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DATE MODIFIED: 5/21/2021 6:19 AM

6. Determine whether $x = 7$ is in the solution set of the inequality $0 < \frac{x-4}{6} < 2$.

a. Yes
b. No

ANSWER: a
POINTS: 1
REFERENCES: 1.7.25
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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7. Determine whether $x = 2$ is in the solution set of the inequality $|x - 12| \geq 1$.

a. No
b. Yes

ANSWER: b
POINTS: 1
REFERENCES: 1.7.27
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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8. Solve the inequality.

$10x < -90$

a. $x > -9$
b. $x < 9$
c. $x > 9$
d. $x < -9$
e. No solution

ANSWER: d
POINTS: 1
REFERENCES: 1.7.30
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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9. Solve the inequality.

$x + 4 \leq 16$

a. $x \geq -12$
b. $x \leq -12$
c. $x \geq 12$
d. $x \leq 12$
e. $x \geq 20$

ANSWER: d
POINTS: 1
REFERENCES: 1.7.34

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Section 1.7 - Linear Inequalities in One Variable

QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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10. Solve the inequality.

$$\frac{1}{2}x - 4 \le x - 5$$

a. $x \le 2$
b. $x \le -2$
c. $x \ge -2$
d. $x \ge 2$
e. No solution

ANSWER: d
POINTS: 1
REFERENCES: 1.7.41
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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11. Solve the inequality.

$$4x - 1 < \frac{3}{4}(16x - 2)$$

a. $x < \frac{1}{16}$
b. $x < 16$
c. $x > 16$
d. $x > \frac{1}{4}$
e. $x > \frac{1}{16}$

ANSWER: e
POINTS: 1
REFERENCES: 1.7.44
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic

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Section 1.7 - Linear Inequalities in One Variable

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12. Solve the inequality.

$13 - 1.3x < -5.2$

a. $x > -14$
b. $x > 14$
c. $x < 14$
d. $x < -14$
e. No solution

ANSWER: b
POINTS: 1
REFERENCES: 1.7.46
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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13. Solve the inequality.

$-12 \leq -(3x + 3) < 24$

a. $-9 \leq x \leq 3$
b. $-9 < x < 3$
c. $3 \leq x < 9$
d. $-9 < x \leq 3$
e. $-9 \leq x < 3$

ANSWER: d
POINTS: 1
REFERENCES: 1.7.48
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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14. Solve the inequality.

$$0 \leq \frac{x+5}{2} < 8$$

a. $-5 \leq x < 11$
b. $5 \leq x < 5$

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c. $-11 \leq x < -5$
d. $-5 < x \leq 11$
e. $-11 \leq x < 5$

ANSWER: a
POINTS: 1
REFERENCES: 1.7.52
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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15. Solve the inequality.

$1.8 \leq 0.4x - 1 \leq 3.4$

a. $7 \leq x \leq 11$
b. $-11 \leq x \leq -7$
c. $7 \leq x < 11$
d. $-7 \leq x \leq 11$
e. $7 < x \leq 11$

ANSWER: a
POINTS: 1
REFERENCES: 1.7.55
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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16. Solve the inequality.

$$9 > \frac{1.5x + 6}{2} > 12$$

a. $-8 < x < -12$
b. $-8 < x < 12$
c. $-12 < x < -8$
d. $8 < x < 12$
e. No solution

ANSWER: e
POINTS: 1
REFERENCES: 1.7.56
QUESTION TYPE: Multi-Mode (Multiple choice)

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Section 1.7 - Linear Inequalities in One Variable

HAS VARIABLES: True
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17. Solve the inequality.

$|x| < 2$

a. $x < 2$
b. $-2 \leq x < 2$
c. $-2 \leq x \leq 2$
d. $-2 < x < 2$
e. $-2 < x \leq 2$

ANSWER: d
POINTS: 1
REFERENCES: 1.5.57
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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18. Solve the inequality.

$|x| \geq 11$

a. $-11 \leq x \leq 11$
b. $x \geq 11$
c. $x \leq -11, x \geq 11$
d. $-11 < x \leq 11$
e. $x < -11, x > 11$

ANSWER: c
POINTS: 1
REFERENCES: 1.7.58
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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19. Solve the inequality.

$\left|\frac{x}{9}\right| > 2$

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a. $-18 < x \leq 18$
b. $x \geq 18$
c. $x < -18, x > 18$
d. $x \leq -18, x \geq 18$
e. $-18 \leq x \leq 18$

ANSWER: c
POINTS: 1
REFERENCES: 1.7.60
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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20. Solve the inequality.

$|x - 7| < -1$

a. $x < -8, x > 6$
b. $-8 < x < 8$
c. $-8 < x < 6$
d. $-6 < x < 6$
e. No solution

ANSWER: e
POINTS: 1
REFERENCES: 1.7.61
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 9/22/2014 6:30 AM

21. Solve the inequality.

$|x - 22| \leq 6$

a. $16 \leq x \leq 28$
b. $-28 \leq x \leq 16$
c. $-16 \leq x \leq 28$
d. $-28 \leq x \leq -16$
e. No solution

ANSWER: a
POINTS: 1
REFERENCES: 1.7.63

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Section 1.7 - Linear Inequalities in One Variable

QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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22. Solve the inequality.

$|x - 8| \geq 0$

a. $x \leq 8$
b. $x < 8$
c. $x > 8$
d. $x \geq 8$
e. All real numbers x

ANSWER: e
POINTS: 1
REFERENCES: 1.7.64
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
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23. Solve the inequality.

$$\left|\frac{x-3}{2}\right| \geq 7$$

a. $x \leq -11, x \geq 17$
b. $-17 \leq x \leq 11$
c. $-17 \leq x \leq -11$
d. $x \leq -17, x \geq 11$
e. $-11 \leq x \leq 17$

ANSWER: a
POINTS: 1
REFERENCES: 1.7.67
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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24. Solve the inequality.

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Section 1.7 - Linear Inequalities in One Variable

$|x + 16| + 3 > 19$

a. $0 < x < 16$
b. $x > -32$
c. $x < 0, x > 16$
d. $x < -32, x > 0$
e. $-32 < x < 0$

ANSWER: d
POINTS: 1
REFERENCES: 1.7.70
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 9/22/2014 6:54 AM

25. Solve the inequality.

$5|x + 10| \geq 8$

a. $x \leq -\frac{58}{5}, x \geq -\frac{42}{5}$
b. $x \geq -\frac{58}{5}, x \leq -\frac{42}{5}$
c. $x < -\frac{58}{5}, x \geq -\frac{42}{5}$
d. $-\frac{58}{5} \geq x \geq \frac{42}{5}$
e. $x \geq -\frac{42}{5}$

ANSWER: a
POINTS: 1
REFERENCES: 1.7.71
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
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26. Find the interval(s) on the real number line for which the radicand $\sqrt{x-4}$ is nonnegative.

a. $(-\infty, 4]$
b. $[4, \infty)$
c. $(-4, \infty)$
d. $(4, \infty)$

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e. $(-\infty, 4)$

ANSWER: b
POINTS: 1
REFERENCES: 1.7.89
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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DATE MODIFIED: 9/22/2014 7:07 AM

27. Find the interval(s) on the real number line for which the radicand $\sqrt{x+9}$ is nonnegative.

a. $(-\infty, -9)$
b. $(-9, \infty)$
c. $(-\infty, 9]$
d. $(9, \infty)$
e. $[-9, \infty)$

ANSWER: e
POINTS: 1
REFERENCES: 1.7.91
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 9/22/2014 7:10 AM

28. Find the interval(s) on the real number line for which the radicand $\sqrt{7-x}$ is nonnegative.

a. $(7, \infty)$
b. $(-7, \infty)$
c. $(-\infty, -9)$
d. $(-\infty, 7]$
e. $[-7, \infty)$

ANSWER: d
POINTS: 1
REFERENCES: 1.7.92
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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29. Find the interval(s) on the real number line for which the radicand $\sqrt[4]{11-2x}$ is nonnegative.

a. $(-\infty, -\frac{11}{2})$

b. $[-\frac{11}{2}, \infty)$

c. $(-\infty, \frac{11}{2}]$

d. $(-11, \infty)$

e. $(\frac{11}{2}, \infty)$

ANSWER: c
POINTS: 1
REFERENCES: 1.7.93
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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30. Use absolute value notation to define the interval (or pair of intervals) on the real number line.

All real numbers within 6 units of 11.

a. $|x - 11| > 6$
b. $|x + 11| > 6$
c. $|x - 11| \geq 6$
d. $|x - 11| \leq 6$
e. $|x - 11| < 6$

ANSWER: e
POINTS: 1
REFERENCES: 1.7.101
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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31. Use absolute value notation to define the interval (or pair of intervals) on the real number line.

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Section 1.7 - Linear Inequalities in One Variable

All real numbers at least two units from 8.

a. $|x - 8| \geq 2$
b. $|x - 8| > 2$
c. $|x - 8| < 2$
d. $|x - 8| \leq 2$
e. $|x + 8| \geq 2$

ANSWER: a
POINTS: 1
REFERENCES: 1.7.102
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
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32. Use absolute value notation to define the interval (or pair of intervals) on the real number line.

All real numbers more than six units from -9.

a. $|x - 9| \leq 6$
b. $|x - 9| > 6$
c. $|x + 9| > 6$
d. $|x + 9| < 6$
e. $|x + 9| \geq 6$

ANSWER: c
POINTS: 1
REFERENCES: 1.7.103
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
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33. Use absolute value notation to define the interval (or pair of intervals) on the real number line.

All real numbers no more than eight units from -5.

a. $|x + 5| > 8$
b. $|x + 5| \leq 8$
c. $|x + 5| \geq 8$
d. $|x - 5| \leq 8$
e. $|x - 5| > 8$

ANSWER: b
POINTS: 1

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REFERENCES: 1.7.104
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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34. Use inequality notation to describe the subset of real numbers.

A company expects its earnings per share E for the next quarter to be no less than \$4.13 and no more than \$4.31.

a. $4.13 > E > 4.31$
b. $4.13 \leq E \leq 4.31$
c. $4.13 < E \leq 4.31$
d. $4.13 \leq E < 4.31$
e. $4.13 < E < 4.31$

ANSWER: b
POINTS: 1
REFERENCES: 1.7.105
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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35. Use inequality notation to describe the subset of real numbers.

The net income I of a company is expected to be no less than \$239 million.

a. $I \geq 239{,}000{,}000$
b. $I \leq 239{,}000{,}000$
c. $I < 239{,}000{,}000$
d. $I > 239{,}000{,}000$
e. None of these

ANSWER: a
POINTS: 1
REFERENCES: 1.7.108
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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36. The maximum heart rate of a person in normal health is related to the person's age by the equation $r = 240$ -

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A where r is the maximum heart rate in beats per minute and A is the person's age in years. Some physiologists recommend that during physical activity a sedentary person should strive to increase his or her heart rate to at least 50% of the maximum heart rate, and a highly fit person should strive to increase his or her heart rate to at most 70% of the maximum heart rate. (Source: American Heart Association)
Express as an interval the range of the target heart rate for a 25-year-old.

a. $107.5 < r \leq 150.5$
b. $107.5 \leq r \leq 150.5$
c. $107.5 < r < 150.5$
d. $117.5 \leq r \leq 160.5$
e. $107.5 \leq r < 150.5$

ANSWER: b
POINTS: 1
REFERENCES: 1.7.109
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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37. You are considering two job offers. The first job pays $3,400 per month. The second job pays $1,000 per month plus a commission of 2% of your gross sales. Write an inequality yielding the gross sales x per month for which the second job will pay the greater monthly wage. Solve the inequality.

a. $1{,}000 + 0.02x \geq 3{,}400;\ x \geq 120{,}000$
b. $1{,}000 + 0.02x > 3{,}400;\ x > 120{,}000$
c. $1{,}000 + 0.02x < 3{,}400;\ x > 120{,}000$
d. $1{,}000 + 0.02x > 3{,}400;\ x < 120{,}000$
e. $1{,}000 + 0.02x < 3{,}400;\ x < 120{,}000$

ANSWER: b
POINTS: 1
REFERENCES: 1.7.112
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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38. In order for an investment of $750 to grow to more than $930 in 2 years, what must the annual interest rate be? Round your answer to two decimal places. [$A = P(1 + rt)$]

a. $r > 13.00\%$
b. $r > 16.00\%$
c. $r > 11.00\%$
d. $r > 14.00\%$

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e. $r > 12.00\%$

ANSWER: e
POINTS: 1
REFERENCES: 1.7.114
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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39. The revenue from selling x units of a product is $R = 115.85x$. The cost of producing x units is $C = 93x + 750$. To obtain a profit, the revenue must be greater than the cost. For what values of x will this product return a profit?

a. $x \leq 33$
b. $x \geq 33$
c. $x < 33$
d. $x < 31$
e. $32 < x < 33$

ANSWER: b
POINTS: 1
REFERENCES: 1.7.115
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
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40. A doughnut shop sells a dozen doughnuts for $4.75. Beyond the fixed costs (rent, utilities, and insurance) of $220 per day, it costs $2.5 for enough materials (flour, sugar, and so on) and labor to produce a dozen doughnuts. The daily profit from doughnut sales varies from $60 to $270. Between what levels (in dozens) do the daily sales vary?
(Round your answer to two decimal places.)

a. $124.44 < x > 217.78$
b. $124.44 < x < 217.78$
c. $124.44 < x \leq 217.78$
d. $124.44 \leq x < 217.78$
e. $124.44 \leq x \leq 217.78$

ANSWER: e
POINTS: 1
REFERENCES: 1.7.117
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic

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Section 1.7 - Linear Inequalities in One Variable

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41. A person enrolls in a diet and exercise program that guarantees a loss of at least $1\frac{1}{2}$ pounds per week. The person's weight at the beginning of the program is 200 pounds. Find the maximum number of weeks before the person attains a goal weight of 140 pounds.

a. 40 wk
b. 38 wk
c. 50 wk
d. 45 wk
e. 55 wk

ANSWER: a
POINTS: 1
REFERENCES: 1.7.118
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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42. The average salaries S (in thousands of dollars) for elementary school teachers in the United States from 1990 through 2005 are approximated by the model

$$S = 1.09t + 30.9,\ 0 \le t$$

where t represents the year, with $t = 0$ corresponding to 1990.
If this relationship between salary and time continues, when will the average salary exceed $58,000? (Round the answer to two decimal places.)

a. $t > 24.86$ (2015)
b. $t < 28.86$ (before 2015)
c. $t > 25.86$ (2016)
d. $t < 26.86$ (before 2017)
e. $t > 27.86$ (2018)

ANSWER: a
POINTS: 1
REFERENCES: 1.7.121
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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43. The numbers of eggs E (in billions) produced in the United States from 1990 through 2006 can be modeled by

$$E = 1.52t + 68.0,\ 0 \le t$$

where t represents the year, with $t = 0$ corresponding to 1990.
If this relationship between number of eggs and time continues, when was the annual egg production 70 billion, but no more than 99 billion?
(Round the answer to two decimal places.)

a. $3.32 \le t \le 22.39$; Between 1993 and 2012
b. $2.32 \le t \le 21.39$; Between 1992 and 2011
c. $4.32 \le t \le 23.39$; Between 1994 and 2013
d. $5.32 \le t \le 24.39$; Between 1995 and 2014
e. $1.32 \le t \le 20.39$; Between 1991 and 2010

ANSWER: e
POINTS: 1
REFERENCES: 1.7.122
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
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44. The side of a square is measured as 10.2 inches with a possible error of $\frac{1}{4}$ inch. Using these measurements, determine the interval containing the possible areas of the square.
Round your answers to three decimal places.

a. $103.003 \text{ in.}^2 \le \text{area} \le 113.203 \text{ in.}^2$
b. $99.003 \text{ in.}^2 \le \text{area} \le 109.203 \text{ in.}^2$
c. $101.003 \text{ in.}^2 \le \text{area} \le 111.203 \text{ in.}^2$
d. $102.003 \text{ in.}^2 \le \text{area} \le 112.203 \text{ in.}^2$
e. $100.003 \text{ in.}^2 \le \text{area} \le 110.203 \text{ in.}^2$

ANSWER: b
POINTS: 1
REFERENCES: 1.7.123
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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Section 1.7 - Linear Inequalities in One Variable

45. You stop at a self-service gas station to buy 15 gallons of 87-octane gasoline at $2.11 a gallon. The gas pump is accurate to within $\frac{1}{10}$ of a gallon. How much might you be undercharged or overcharged per gallon? Round your answer to two decimal places.

a. $0.42
b. $2.11
c. $0.21
d. $4.22
e. $0.02

ANSWER: c
POINTS: 1
REFERENCES: 1.7.125
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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46. A time study was conducted to determine the length of time required to perform a particular task in a manufacturing process. The times required by approximately two-thirds of the workers in the study satisfied the inequality

$$\left|\frac{t-15.9}{1.7}\right|<1$$

where t is time in minutes. Determine the interval on the real number line in which these times lie.

a. $14.2 \leq t < 17.6$
b. $-14.2 < t < 17.6$
c. $14.2 \leq t \leq 17.6$
d. $-17.6 < t < -14.2$
e. $14.2 < t < 17.6$

ANSWER: e
POINTS: 1
REFERENCES: 1.7.127
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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47. The heights of two-thirds of the members of a population satisfy the inequality

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$$\left|\frac{h-6.6}{2.7}\right| \le 1$$

where h is measured in inches. Determine the interval on the real number line in which these heights lie.

a. $3.9 \le h \le 9.3$
b. $3.9 < h < 9.3$
c. $3.9 < h \le 9.3$
d. $3.9 \le h < 9.3$
e. None of these

ANSWER: a
POINTS: 1
REFERENCES: 1.7.128
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
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48. An electronic device is to be operated in an environment with relative humidity h in the interval defined by $|h-80| \le 30$. What are the minimum and maximum relative humidity for the operation of this device?

a. 70 and 130
b. 80 and 140
c. 60 and 120
d. 30 and 80
e. 50 and 110

ANSWER: e
POINTS: 1
REFERENCES: 1.7.129
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
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49. Michael Kasha of Florida State University used physics and mathematics to design a new classical guitar. The model he used for the frequency of the vibrations on a circular plate was

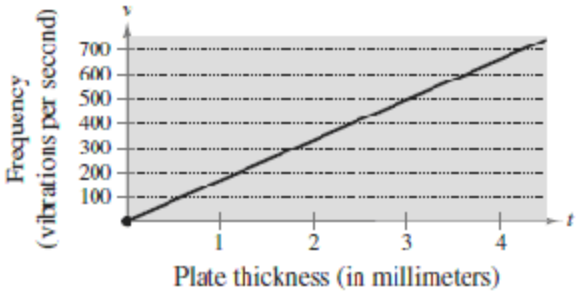
$$v = \left(\frac{2.6t}{d^2}\right)\sqrt{\frac{E}{\rho}},$$

where v is the frequency (in vibrations per second), t is the plate thickness (in millimeters), d is the diameter of the plate, E is the elasticity of the plate material, and ρ is the density of the plate material. For fixed values of d,

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E and ρ the graph of the equation is a line (see figure).



Estimate the frequency when the plate thickness is 2 millimeters.

a. Around 433
b. Around 333
c. Around 533
d. Around 233
e. None of these

ANSWER: b
POINTS: 1
REFERENCES: 1.7.130
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
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50. If $-10 \le x \le 4$, then which of the following is true.

a. $10 \ge x$ and $x \ge 4$
b. $-10 \ge -x$ and $x \ge 4$
c. $10 \ge -x$ and $-x \ge -4$
d. $-10 \ge -x$ and $-x \ge -4$
e. $10 \ge x$ and $-x \ge -4$

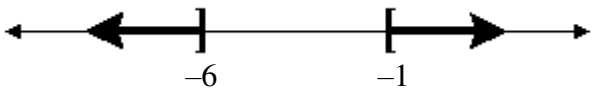
ANSWER: c
POINTS: 1
REFERENCES: 1.7.132
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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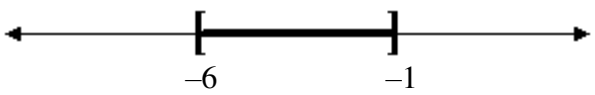
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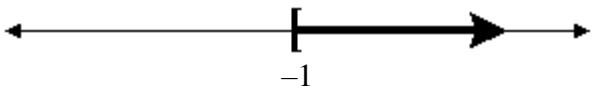
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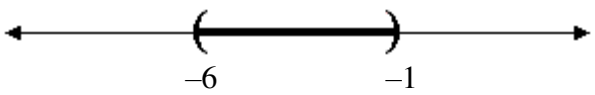
Section 1.7 - Linear Inequalities in One Variable

51. Match the inequality $-6 \le x \le -1$ with its graph.

a.


b.


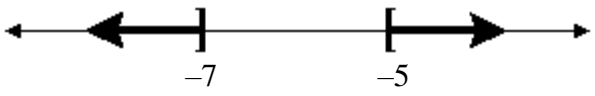
c.


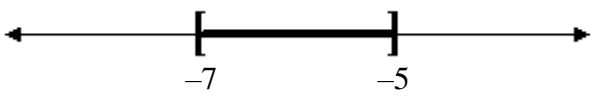
d.


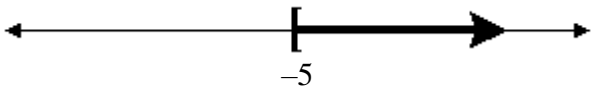
e.

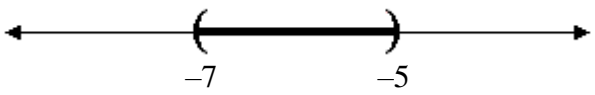

ANSWER: b
POINTS: 1
DIFFICULTY: Easy
REFERENCES: 1-6
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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52. Match the inequality $-7 < x < -5$ with its graph.

a.


b.


c.


d.


e.


ANSWER: d
POINTS: 1
DIFFICULTY: Easy
REFERENCES: 1-6
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True

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Section 1.7 - Linear Inequalities in One Variable

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53. Which of the following is not included in the solution set of the inequality $-3 \le \frac{x+8}{16} \le 3$?

a. $x = -56$
b. $x = -58$
c. $x = 37$
d. $x = 35$
e. $x = 8$

ANSWER: b
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 7-10
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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54. Which of the following is not included in the solution set of the inequality $|7x+8| < 9$?

a. $x = 2$
b. $x = -\frac{6}{7}$
c. $x = -\frac{16}{7}$
d. $x = -\frac{15}{14}$
e. $x = -\frac{17}{7}$

ANSWER: e
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 7-10
QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
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55. Solve: $-8 < -(x + 3) \le 7$

a. $-10 \le x < 5$
b. $-11 < x \le -10$

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c. $-5 > x \geq -10$

d. $-10 > x \geq 11$

e. no solution

ANSWER: a
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 11-20
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
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56. Solve: $3(x - 10) > 3x - 27$

a. $x > 3$

b. $-3 < x < 10$

c. $x \leq -20$

d. $x < -10$

e. no solution

ANSWER: e
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 11-20
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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57. Solve: $|1 + 11x| + 4 < 7$

a. $x < \frac{2}{11}$

b. $-\frac{2}{11} < x < \frac{4}{11}$

c. $-\frac{4}{11} < x < \frac{2}{11}$

d. $-\frac{10}{11} < x < \frac{12}{11}$

e. no solution

ANSWER: c
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 29-36

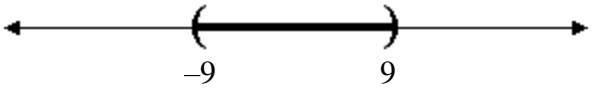
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Section 1.7 - Linear Inequalities in One Variable

QUESTION TYPE: Multiple Choice
HAS VARIABLES: True
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DATE MODIFIED: 9/24/2014 3:17 AM

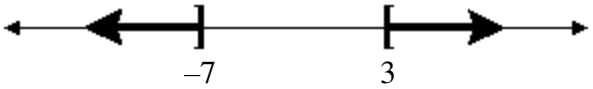
58. Use absolute value notation to define the interval shown below.



a. $|x + 9| < 0$
b. $|x| > -9$
c. $|9 - x| > 0$
d. $|x| < 9$
e. $|x - 9| > 0$

ANSWER: d
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 39-46
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 9/23/2014 6:33 AM

59. Use absolute value notation to define the interval shown below.



a. $|x + 2| - 5 > 0$
b. $|x + 2| - 5 \geq 0$
c. $|x - 5| \geq 2$
d. $|x - 2| \geq 5$
e. $-7 \leq x \leq 3$

ANSWER: b
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 39-46
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
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60. Solve the inequality

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Section 1.7 - Linear Inequalities in One Variable

$4x + 7 < 15 + 2x$

a. $x > 4$
b. $x < -4$
c. $x > -4$
d. $x < 4$
e. None of the above.

ANSWER: d
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 9/23/2014 6:45 AM

61. Solve the inequality

$\frac{7}{8}x - 5 \leq x + 2$

a. $x \leq -7$
b. $x \geq -56$
c. $x \leq -56$
d. $x \geq -7$
e. None of the above.

ANSWER: b
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 9/23/2014 6:49 AM

62. Solve the inequality

$19 < 2x + 8 < 24$

a. $22 < x < 32$
b. $11 < x < 16$
c. $\frac{27}{2} < x < 16$
d. $27 < x < 32$
e. $\frac{11}{2} < x < 8$

ANSWER: e

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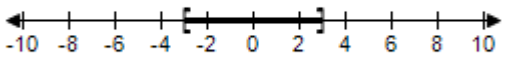
Section 1.7 - Linear Inequalities in One Variable

POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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DATE MODIFIED: 9/23/2014 6:56 AM

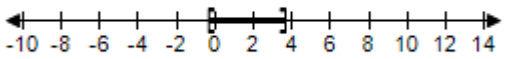
63. Sketch the solution to the following inequality on the real number line:

$2|5-3x| \le 6$

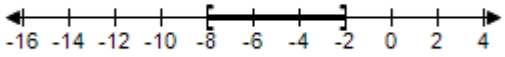
a.



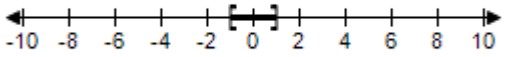
b.



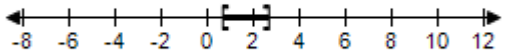
c.



d.

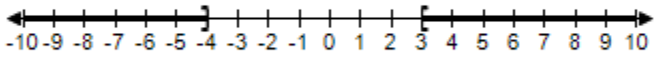


e.



ANSWER: e
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 9/23/2014 7:20 AM

64. Use absolute value notation to define the interval (or pair of intervals) on the real number line below.



a. $x < -4, x > 3$
b. $-4 < x < 3$
c. $x \le -4, x \ge 3$
d. $-4 \le x \le 3$
e. None of the above.

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Section 1.7 - Linear Inequalities in One Variable

ANSWER: c
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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DATE MODIFIED: 9/23/2014 7:29 AM

65. Solve the inequality

$$\left|\frac{x-4}{3}\right| \geq 5$$

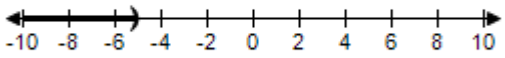
a. $x \leq -11$
b. $x \geq 19$
c. $-11 \leq x \leq 19$
d. $x \leq 19$
e. $x \leq -11, x \geq 19$

ANSWER: e
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 9/23/2014 7:36 AM

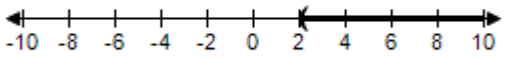
66. Solve the inequality and graph the solution on the real number line.

$$\frac{x+12}{x+5} - 2 < 0$$

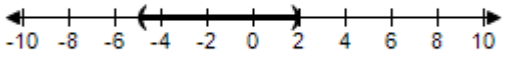
a.



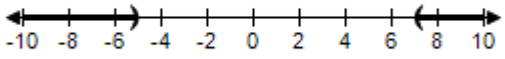
b.



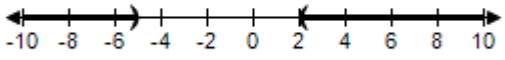
c.



d.



e.



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ANSWER:	e
POINTS:	1
QUESTION TYPE:	Multi-Mode (Multiple choice)
HAS VARIABLES:	True
STUDENT ENTRY MODE:	Basic
DATE CREATED:	6/10/2014 4:17 PM
DATE MODIFIED:	9/23/2014 7:50 AM

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Section 1.8 - Other Types of Inequalities

1. Determine whether the value of $x = \frac{2}{7}$ is a solution of the inequality.

$x^2 - 2 < 0$

a. Yes
b. No

ANSWER: a
POINTS: 1
REFERENCES: 1.8.5
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/16/2015 3:00 AM

2. Determine whether the value of $x = -6$ is a solution of the inequality.

$x^2 - x - 14 \geq 0$

a. No
b. Yes

ANSWER: b
POINTS: 1
REFERENCES: 1.8.6
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
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3. Determine whether the value of $x = -1$ is a solution of the inequality.

$$\frac{3x^2}{x^2+4} < 1$$

a. Yes
b. No

ANSWER: a
POINTS: 1
REFERENCES: 1.8.8
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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Section 1.8 - Other Types of Inequalities

4. Find the key numbers of the expression.

$16x^3 - 49x^2$

a. $0, \frac{16}{49}$
b. 0, 49
c. 0, 51
d. 0, –49
e. $0, \frac{49}{16}$

ANSWER: e
POINTS: 1
REFERENCES: 1.8.10
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
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5. Find the key numbers of the expression.

$\frac{1}{x-7} + 1$

a. –6, 7
b. 6, 7, 1
c. –6, –7
d. 6, 7
e. 6, –7

ANSWER: d
POINTS: 1
REFERENCES: 1.8.11
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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6. Solve the inequality and graph the solution on the real number line.

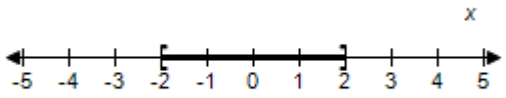
$x^2 < 4$

a. $[-2, 2]$

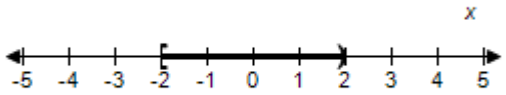
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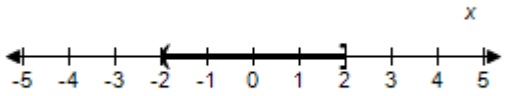
Section 1.8 - Other Types of Inequalities



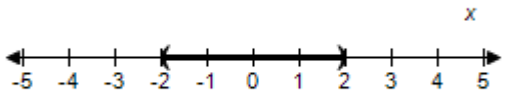
b. $[-2, 2)$



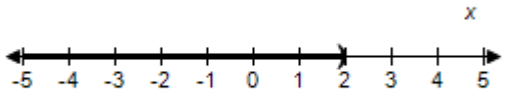
c. $(-2, 2]$



d. $(-2, 2)$



e. $(-\infty, 2)$



ANSWER: d
POINTS: 1
REFERENCES: 1.8.13
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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DATE MODIFIED: 6/16/2021 1:02 AM

7. Solve the inequality and graph the solution on the real number line.

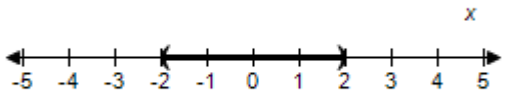
$x^2 \leq 4$

a. $(-2, 2)$

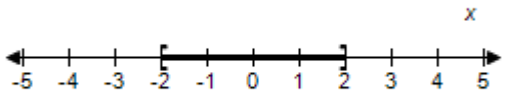
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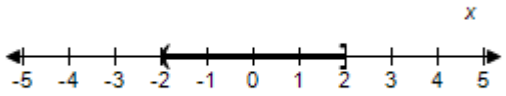
Section 1.8 - Other Types of Inequalities



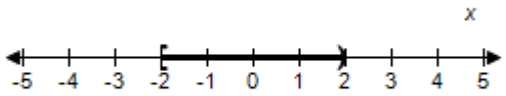
b. $[-2, 2]$



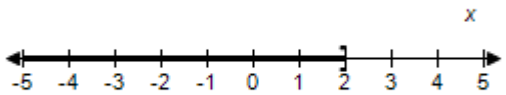
c. $(-2,2]$



d. $[-2,2)$



e. $(-\infty,2]$



ANSWER: b
POINTS: 1
REFERENCES: 1.8.14
QUESTION TYPE: Multi-Mode (Multiple choice)
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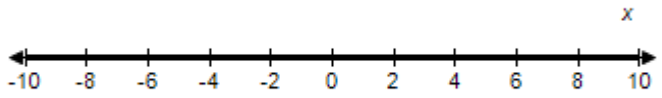
8. Solve the inequality and graph the solution on the real number line.

$(x-3)^2 \geq 1$

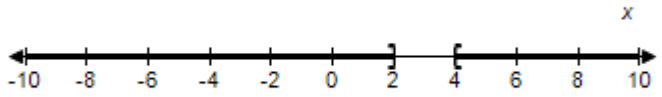
a. $(-\infty, \infty)$

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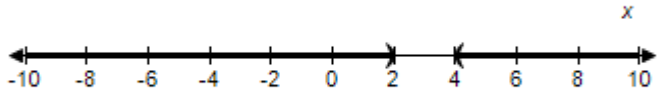
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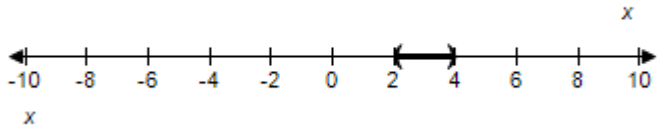
b. $(-\infty, 2] \cup [4, \infty)$



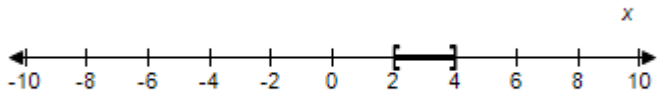
c. $(-\infty, 2) \cup (4, \infty)$



d. $(2,4)$



e. $[2,4]$



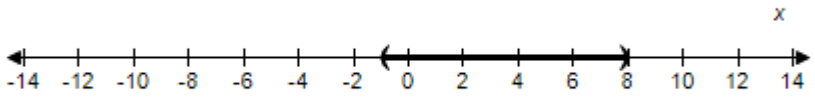
ANSWER: b
POINTS: 1
REFERENCES: 1.8.16
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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9. Solve the inequality and graph the solution on the real number line.

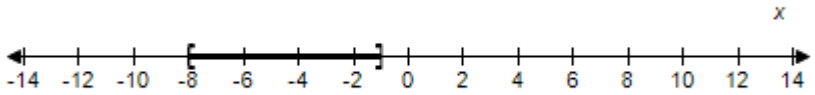
$x^2 - 7x + 8 < 16$

a. $(-1, 8)$

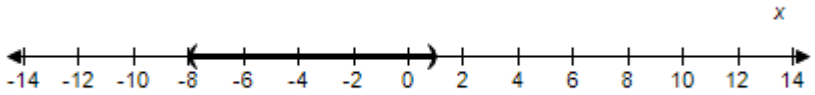
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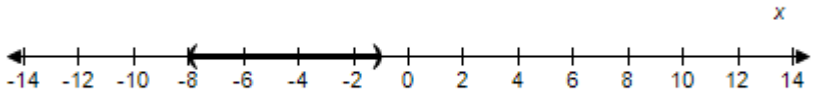
b. $[-8, -1]$



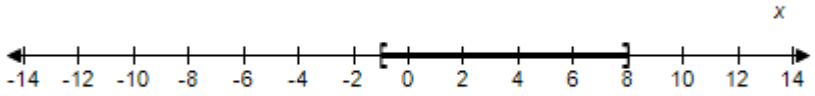
c. $(-8, 1)$



d. $(-8, -1)$



e. $[-1, 8]$



ANSWER: a
POINTS: 1
REFERENCES: 1.8.18
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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10. Solve the inequality and graph the solution on the real number line.

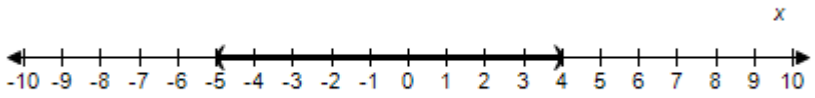
$x^2 + x < 20$

a. $(-5, 4)$

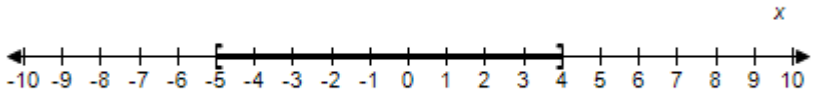
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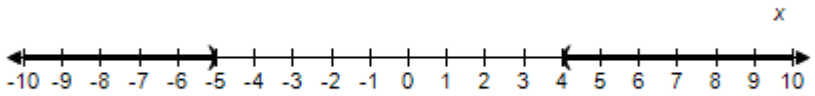
Section 1.8 - Other Types of Inequalities



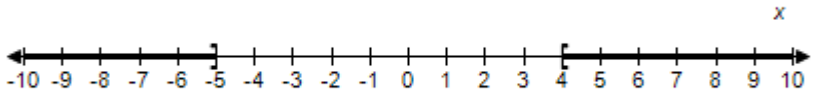
b. $[-5,4]$



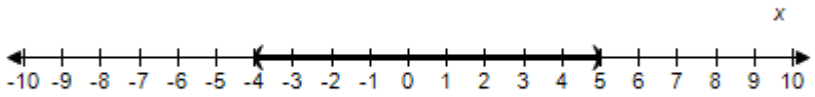
c. $(-\infty,-5)\cup(4,\infty)$



d. $(-\infty,-5]\cup[4,\infty)$



e. $(-4,5)$



ANSWER:	a
POINTS:	1
REFERENCES:	1.8.19
QUESTION TYPE:	Multi-Mode (Multiple choice)
HAS VARIABLES:	True
STUDENT ENTRY MODE:	Basic
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DATE MODIFIED:	6/16/2021 1:57 AM

11. Solve the inequality and graph the solution on the real number line.

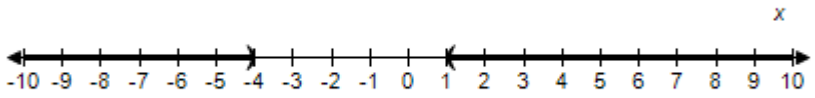
$x^2+3x>4$

a. $(-\infty,-4)\cup(1,\infty)$

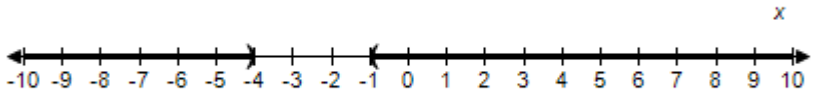
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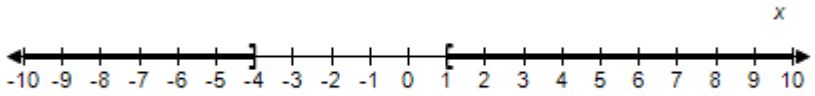
Section 1.8 - Other Types of Inequalities



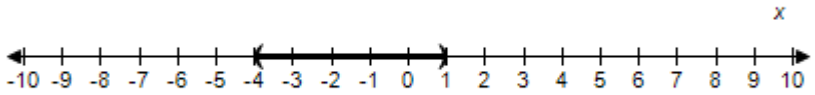
b. $(-\infty, -4) \cup (-1, \infty)$



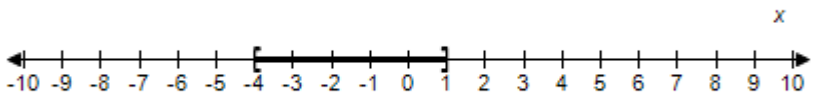
c. $(-\infty, -4] \cup [1, \infty)$



d. $(-4, 1)$



e. $[-4, 1]$



ANSWER:	a
POINTS:	1
REFERENCES:	1.8.20
QUESTION TYPE:	Multi-Mode (Multiple choice)
HAS VARIABLES:	True
STUDENT ENTRY MODE:	Basic
DATE CREATED:	6/10/2014 4:17 PM
DATE MODIFIED:	6/16/2021 2:17 AM

12. Solve the inequality and graph the solution on the real number line.

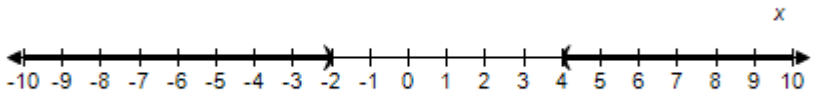
$x^2 > 2x + 8$

a. $(-\infty, -2) \cup (4, \infty)$

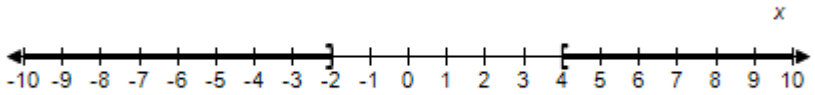
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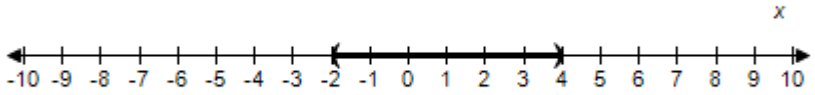
Section 1.8 - Other Types of Inequalities



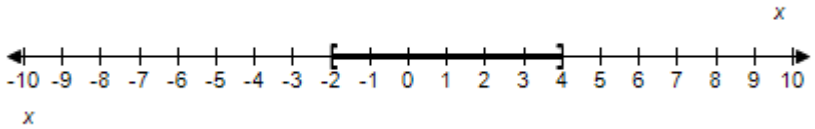
b. $(-\infty, -2] \cup [4, \infty)$



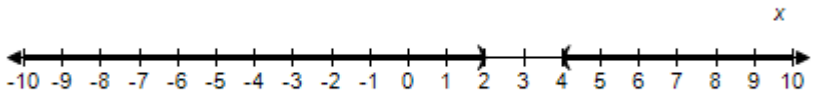
c. $(-2,4)$



d. $[-2,4]$



e. $(-\infty, 2) \cup (4, \infty)$



ANSWER: a
POINTS: 1
REFERENCES: 1.8.22
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 6/16/2021 2:33 AM

13. Solve the inequality and graph the solution on the real number line.

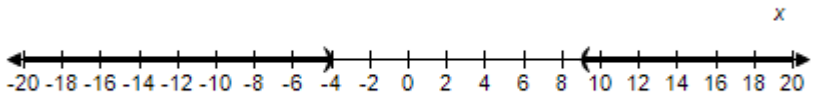
$x^2 - 5x - 36 > 0$

a. $(-\infty, -4) \cup (9, \infty)$

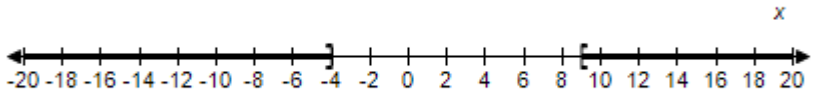
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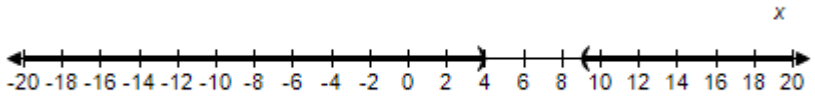
Section 1.8 - Other Types of Inequalities



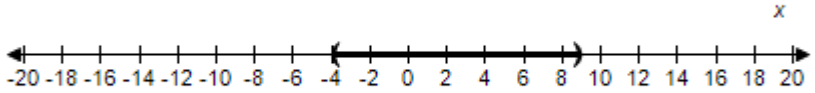
b. $(-\infty, -4] \cup [9, \infty)$



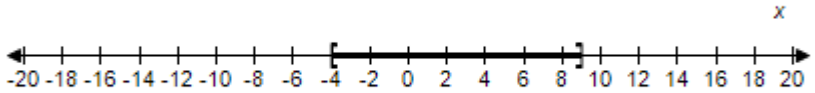
c. $(-\infty, 4) \cup (9, \infty)$



d. $(-4,9)$



e. $[-4,9]$



ANSWER: a
POINTS: 1
REFERENCES: 1.8.25
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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DATE MODIFIED: 6/16/2021 2:43 AM

14. Solve the inequality and graph the solution on the real number line.

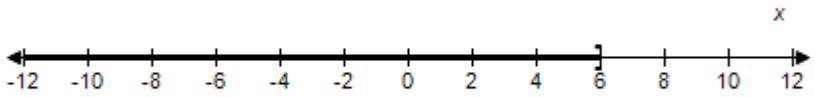
$x^3 + 6x^2 - 36x - 216 \leq 0$

a. $(-\infty, 6]$

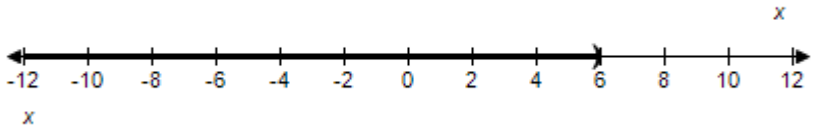
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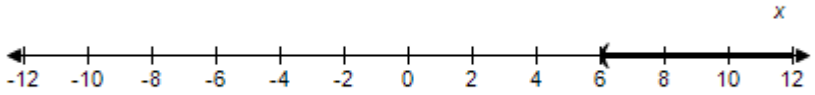
Section 1.8 - Other Types of Inequalities



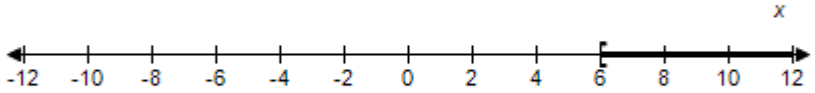
b. $(-\infty, 6)$



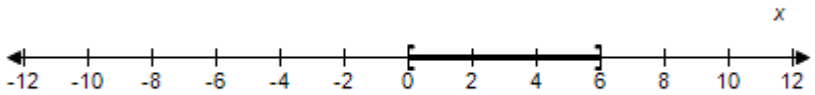
c. $(6, \infty)$



d. $[6, \infty)$



e. $[0,6]$



ANSWER: a
POINTS: 1
REFERENCES: 1.8.26
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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DATE MODIFIED: 6/16/2021 2:58 AM

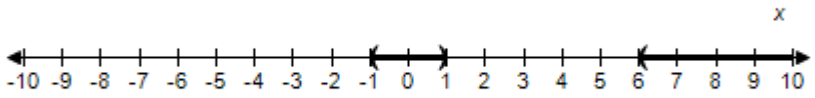
15. Solve the inequality and graph the solution on the real number line.

$x^3 - 6x^2 - x > -6$

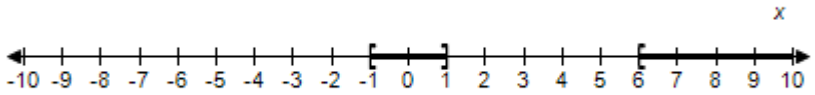
a. $(-1, 1) \cup (6, \infty)$

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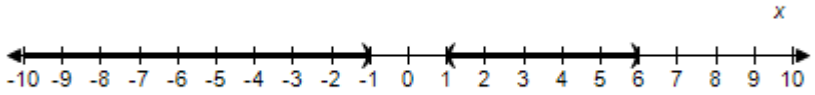
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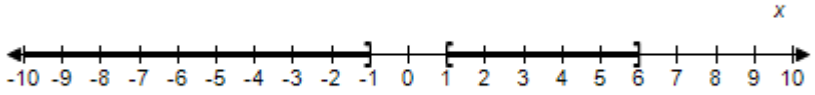
b. $[-1, 1] \cup [6, \infty)$



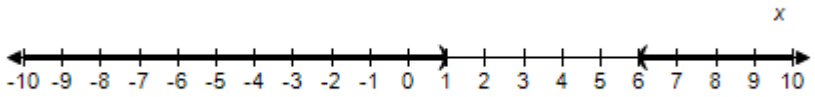
c. $(-\infty, -1) \cup (1, 6)$



d. $(-\infty, -1] \cup [1, 6]$



e. $(-\infty, 1) \cup (6, \infty)$



ANSWER: a
POINTS: 1
REFERENCES: 1.8.27
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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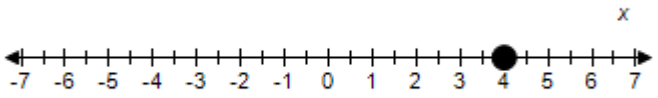
16. Solve the inequality and graph the solution on the real number line.

$16x^2 - 8x + 1 \le 0$

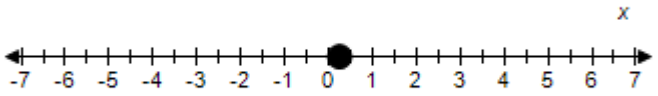
a. $x = 4$

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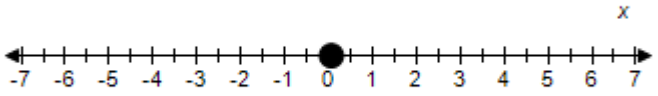
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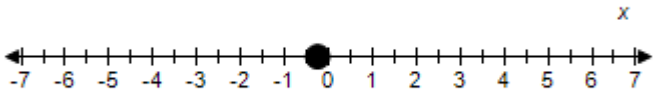
b. $x = \frac{1}{4}$



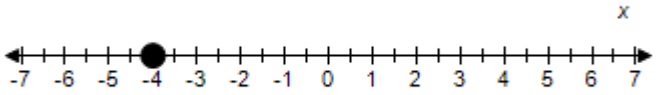
c. $x = \frac{1}{16}$



d. $x = -\frac{1}{4}$



e. $x = -4$



ANSWER:	b
POINTS:	1
REFERENCES:	1.8.29
QUESTION TYPE:	Multi-Mode (Multiple choice)
HAS VARIABLES:	True
STUDENT ENTRY MODE:	Basic
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DATE MODIFIED:	6/16/2021 4:03 AM

17. Solve the inequality and graph the solution on the real number line.

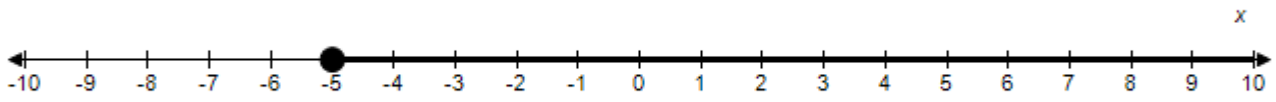
$x^2 + 3x + 5 > 0$

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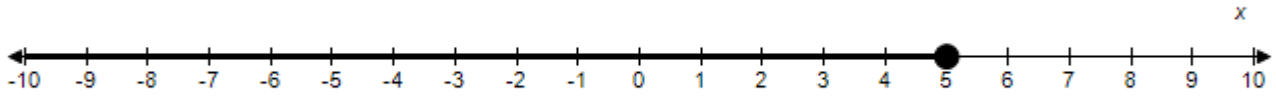
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Section 1.8 - Other Types of Inequalities

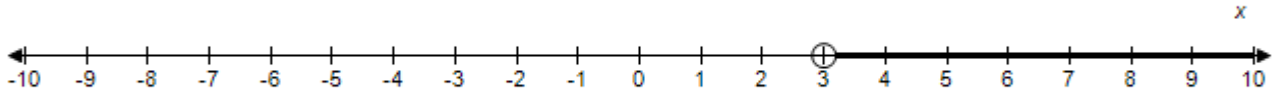
a. $x \geq -5$



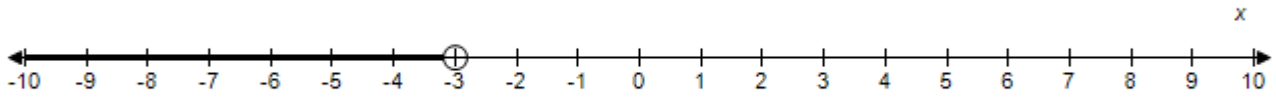
b. $x \leq 5$



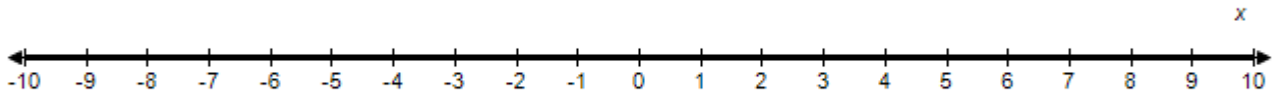
c. $x > 3$



d. $x < -3$



e. All real numbers



ANSWER: e
POINTS: 1
REFERENCES: 1.8.30
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 6/16/2021 4:15 AM

18. Solve the inequality and write the solution set in interval notation.

$6x^2 - 10x < 0$

a. $(-\infty, 0)] \cup [\frac{5}{3}, \infty)$

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b. $\emptyset$

c. $(-\infty, 0) \cup (\frac{5}{3}, \infty)$

d. $[-\frac{5}{3}, \infty)$

e. $(0, \frac{5}{3})$

ANSWER: e
POINTS: 1
REFERENCES: 1.8.31
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 6/16/2021 4:22 AM

19. Solve the inequality and write the solution set in interval notation.

$8x^3 - 16x^2 > 0$

a. $(2, \infty)$
b. $(-\infty, -2)$
c. $(-2, \infty)$
d. $(-\infty, 2)$
e. $(-\infty, 8)$

ANSWER: a
POINTS: 1
REFERENCES: 1.8.32
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 6/16/2021 4:30 AM

20. Solve the inequality and write the solution set in interval notation.

$x^3 - 4x \geq 0$

a. $[-2, 0] \cup [2, \infty]$
b. $[-2, 0] \cup [2, \infty)$
c. $[-4, 0] \cup [2, \infty]$
d. $[-4, \infty)$
e. $[-2, 0] \cap [2, \infty)$

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Section 1.8 - Other Types of Inequalities

ANSWER: b
POINTS: 1
REFERENCES: 1.8.33
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 6/16/2021 4:39 AM

21. Solve the inequality and write the solution set in interval notation.

$x^4(x-8) \le 0$

a. $(-\infty, 8]$
b. $(-\infty, -8)$
c. $(-\infty, -8]$
d. $(-8, 8]$
e. $(-\infty, 8)$

ANSWER: a
POINTS: 1
REFERENCES: 1.8.36
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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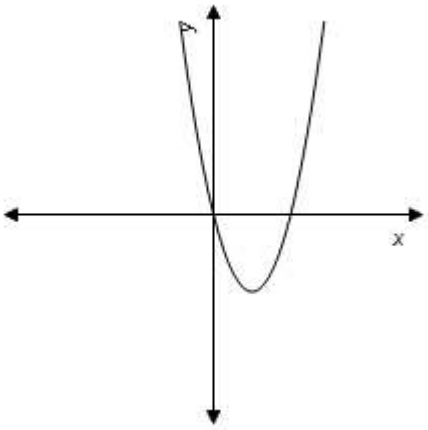
22. Use a graphing utility to graph the equation. Use the graph to approximate the values of x that satisfy the inequality.

Equation:
$y = \frac{1}{4}x^2 - 4x + 1$

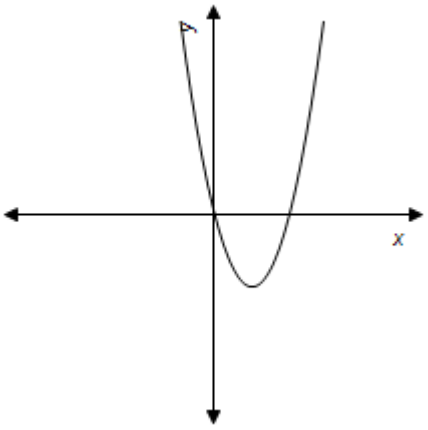
Inequality:
$y \le 0$

a. b.

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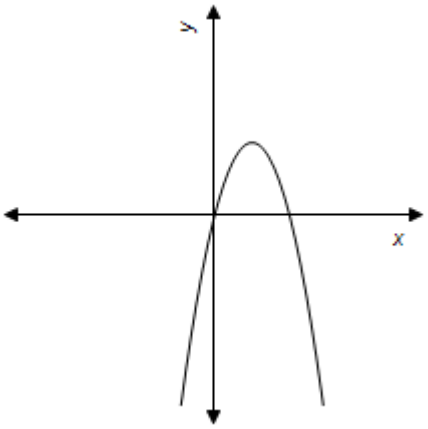


$0 \le x \le 16$



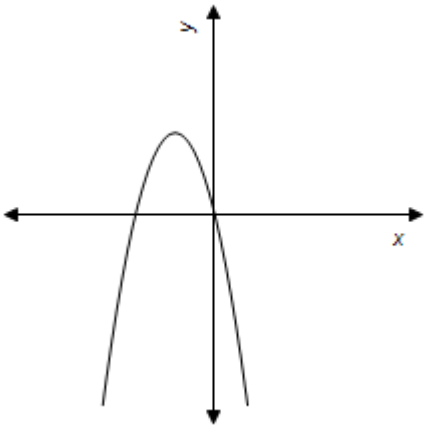
$8-2\sqrt{15} \le x \le 8+2\sqrt{15}$

c.



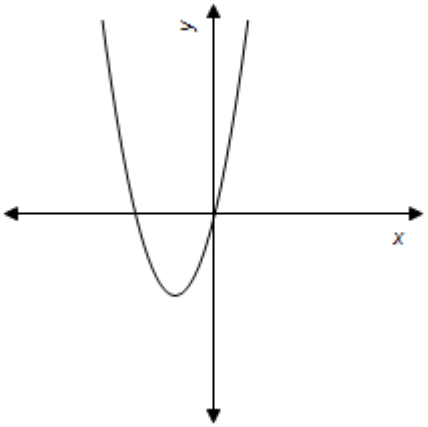
$x \le 8-2\sqrt{15}, x \ge 8+2\sqrt{15}$

d.



$x \le -8-2\sqrt{17}, x \ge -8+2\sqrt{17}$

e.



$-8-2\sqrt{17} \le x \le -8+2\sqrt{17}$

ANSWER: b
POINTS: 1
REFERENCES: 1.8.38

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Section 1.8 - Other Types of Inequalities

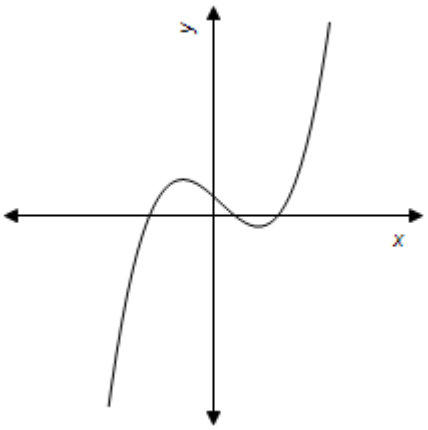
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 6/16/2021 6:52 AM

23. Use a graphing utility to graph the equation. Use the graph to approximate the values of x that satisfy the inequality.

Equation:
$y = x^3 - x^2 - 9x + 9$

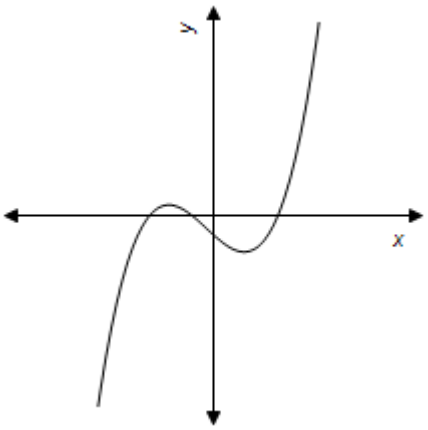
Inequality:
$y \leq 0$

a.



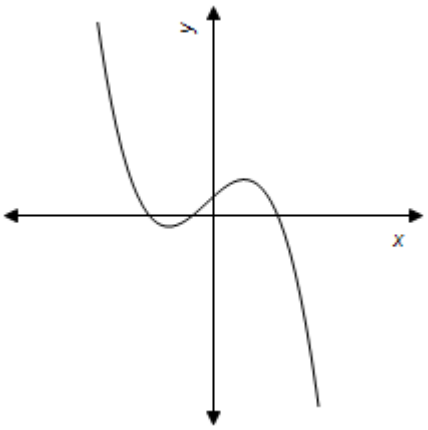
$-3 \leq x \leq 1$
$3 \leq x < \infty$

b.



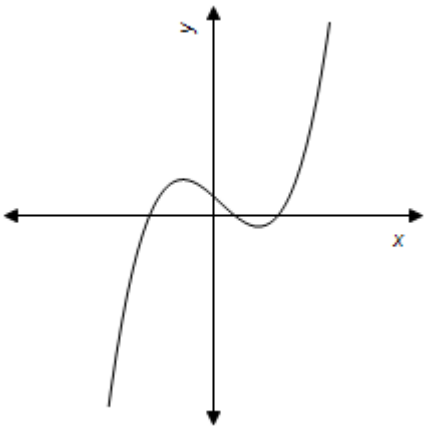
$-\infty < x \leq -3$
$-1 \leq x \leq 3$

c.



$-3 \leq x \leq -1$
$3 \leq x < \infty$

d.



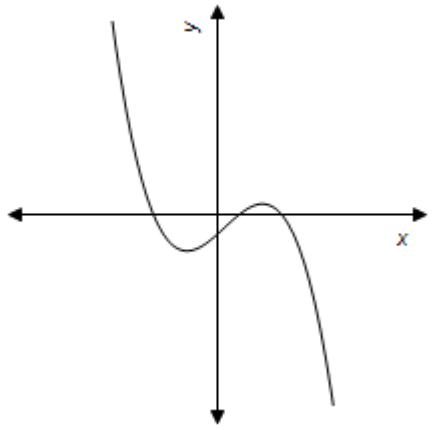
$-\infty < x \leq -3$
$1 \leq x \leq 3$

e.

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Section 1.8 - Other Types of Inequalities



$-3 \le x \le 1$

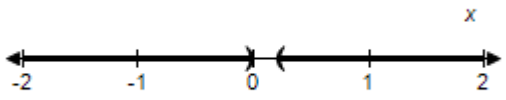
$3 \le x < \infty$

ANSWER: d
POINTS: 1
REFERENCES: 1.8.40a
QUESTION TYPE: Multi-Mode (Multiple choice)
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STUDENT ENTRY MODE: Basic
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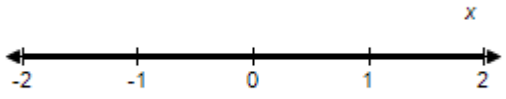
24. Solve the inequality and graph the solution on the real number line.

$$\frac{5x-1}{x} > 0$$

a. $(-\infty, 0) \cup \left(\frac{1}{5}, \infty\right)$



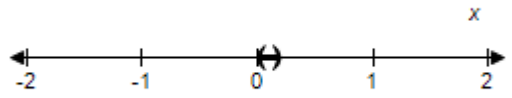
b. $(-\infty, \infty)$



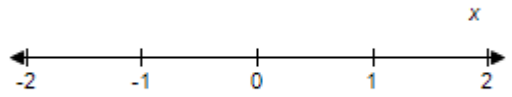
c. $\left(0, \frac{1}{5}\right)$

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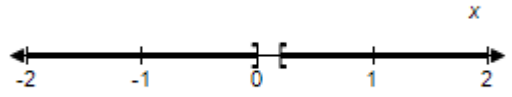
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d. $(-\infty, 0) \cap \left(\frac{1}{5}, \infty\right)$



e. $(-\infty, 0] \cup [1/5, \infty)$

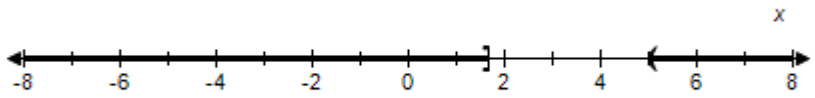


ANSWER: a
POINTS: 1
REFERENCES: 1.8.41
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 6/16/2021 8:37 AM

25. Solve the inequality and graph the solution on the real number line.

$$\frac{3x-5}{x-5} \geq 0$$

a. $\left(-\infty, \frac{5}{3}\right] \cup (5, \infty)$

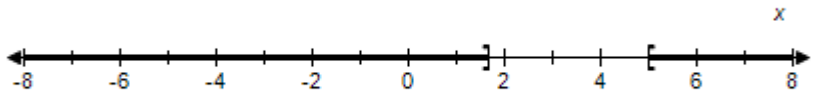


b. $\left(-\infty, \frac{5}{3}\right] \cup [5, \infty)$

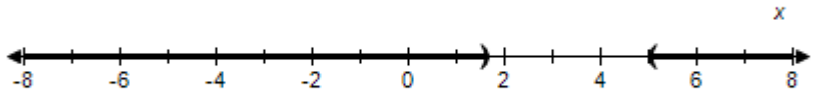
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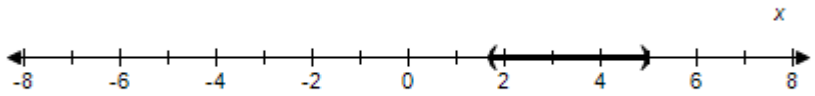
Section 1.8 - Other Types of Inequalities



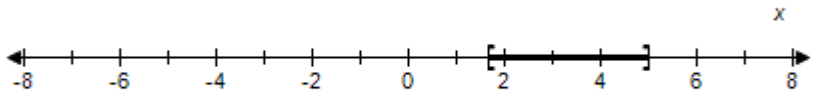
c. $\left(-\infty, \frac{5}{3}\right] \cup (5, \infty)$



d. $\left(\frac{5}{3}, 5\right]$



e. $\left[\frac{5}{3}, 5\right]$



ANSWER: a
POINTS: 1
REFERENCES: 1.8.43
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 6/16/2021 8:55 AM

26. Solve the inequality and graph the solution on the real number line.

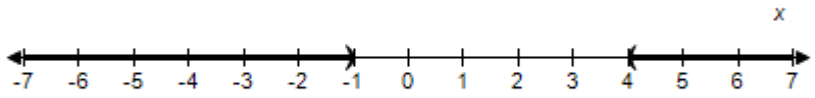
$$\frac{x+6}{x+1} - 2 < 0$$

a. $(-\infty, -1) \cup (4, \infty)$

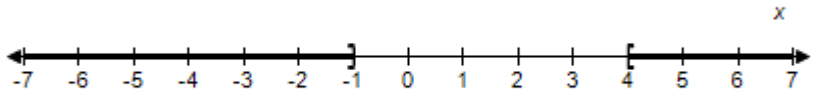
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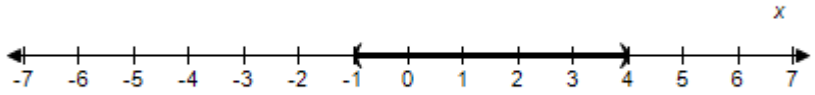
Section 1.8 - Other Types of Inequalities



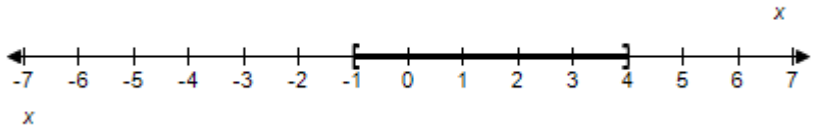
b. $(-\infty, -1] \cup [4, \infty)$



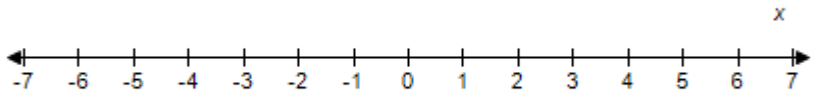
c. $(-1,4)$



d. $[-1,4]$



e. $(-\infty, -1) \cap (4, \infty)$



ANSWER: a
POINTS: 1
REFERENCES: 1.8.45
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
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27. Solve the inequality and graph the solution on the real number line.

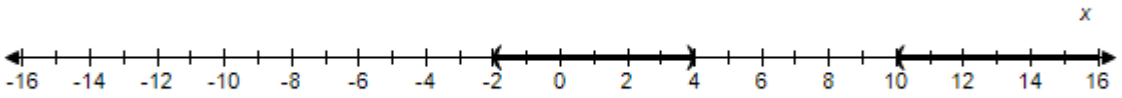
$$\frac{2}{x+2} > \frac{1}{x-4}$$

a. $(-2, 4) \cup (10, \infty)$

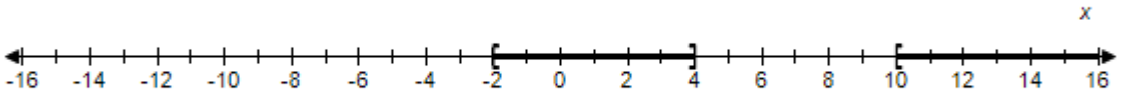
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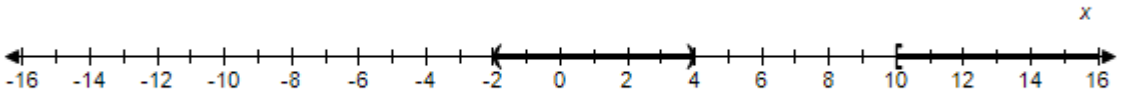
Section 1.8 - Other Types of Inequalities



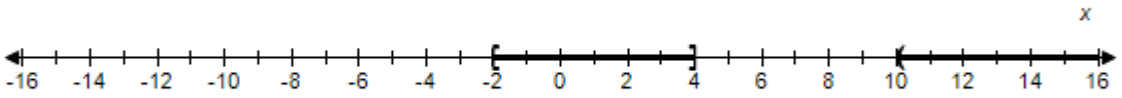
b. $[-2, 4] \cup [10, \infty)$



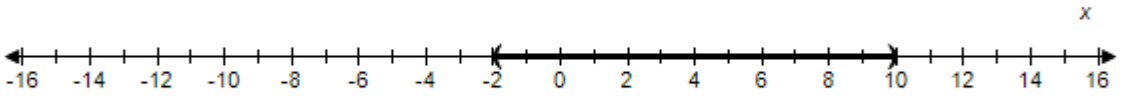
c. $(-2, 4) \cup [10, \infty)$



d. $[-2, 4] \cup (10, \infty)$



e. $(-2, 10)$



ANSWER: a
POINTS: 1
REFERENCES: 1.8.47
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
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28. Solve the inequality and graph the solution on the real number line.

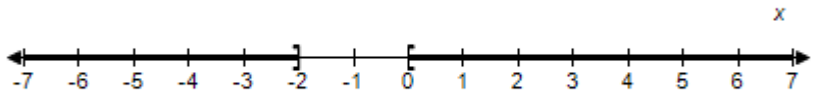
$$\frac{1}{x} \geq \frac{1}{x+2}$$

a. $(-\infty, -2] \cup [0, \infty)$

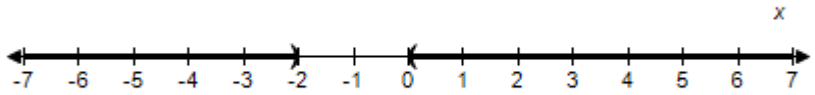
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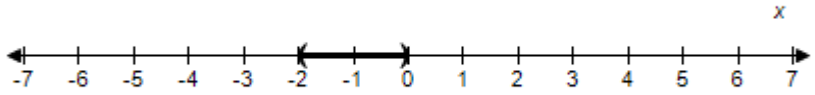
Section 1.8 - Other Types of Inequalities



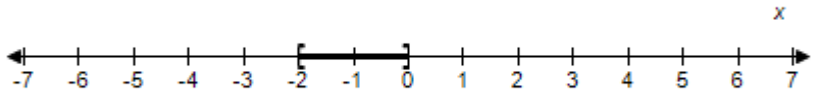
b. $(-\infty, -2) \cup (0, \infty)$



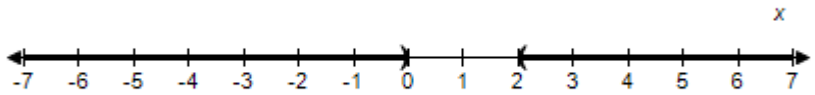
c. $(-2,0)$



d. $[-2,0]$



e. $(-\infty, 0) \cup (2, \infty)$



ANSWER: b
POINTS: 1
REFERENCES: 1.8.50
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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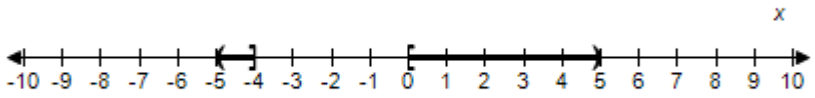
29. Solve the inequality and graph the solution on the real number line.

$$\frac{x^2+4x}{x^2-25} \le 0$$

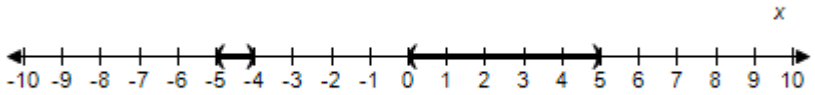
a. $(-5, -4] \cup [0, 5)$

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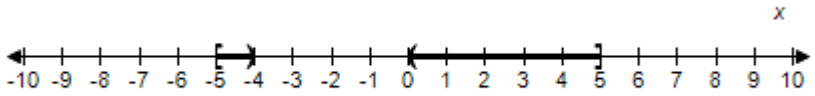
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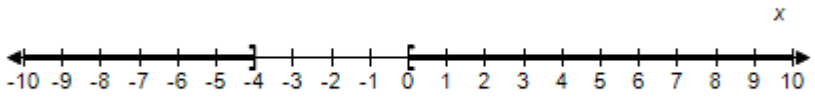
b. $(-5, -4) \cup (0, 5)$



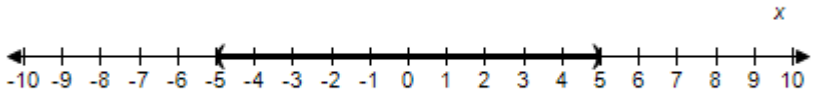
c. $[-5, -4) \cup (0, 5]$



d. $(-\infty, -4] \cup [0, \infty)$



e. $(-5,5)$



ANSWER: a
POINTS: 1
REFERENCES: 1.8.51
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 6/16/2021 10:13 AM

30. Solve the inequality and graph the solution on the real number line.

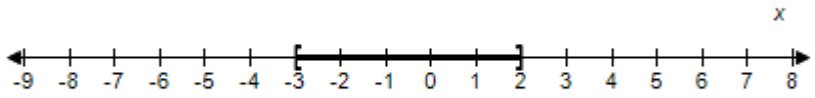
$$\frac{x^2+x-6}{x} \geq 0$$

a. $[-3, 2]$

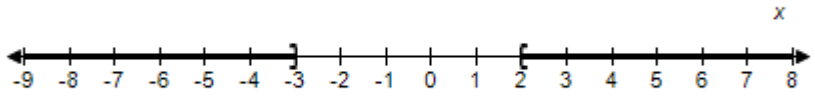
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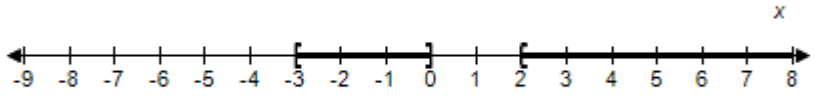
Section 1.8 - Other Types of Inequalities



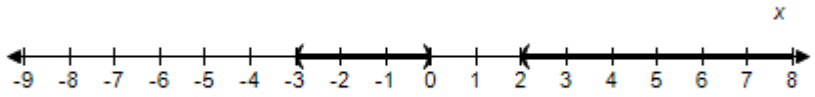
b. $(-\infty, -3] \cup [2, \infty)$



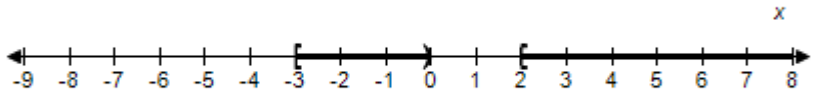
c. $[-3, 0] \cup [2, \infty)$



d. $(-3, 0) \cup (2, \infty)$



e. $[-3, 0) \cup [2, \infty)$



ANSWER: e
POINTS: 1
REFERENCES: 1.8.52
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 6/16/2021 10:26 AM

31. Use a graphing utility to graph the equation. Use the graph to approximate the values of x that satisfy the inequality.

Equation:
$y = \dfrac{4x}{x-3}$

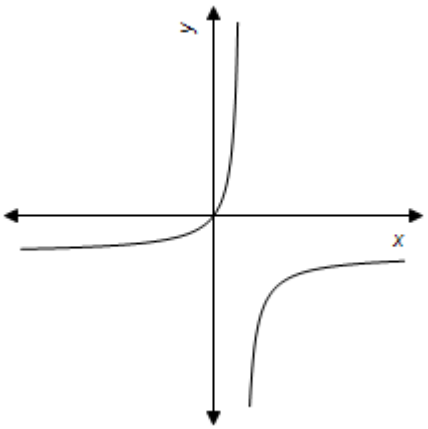
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Section 1.8 - Other Types of Inequalities

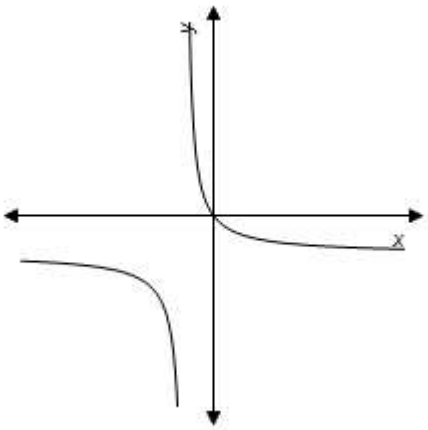
Inequality:
$y \geq 11$

a.



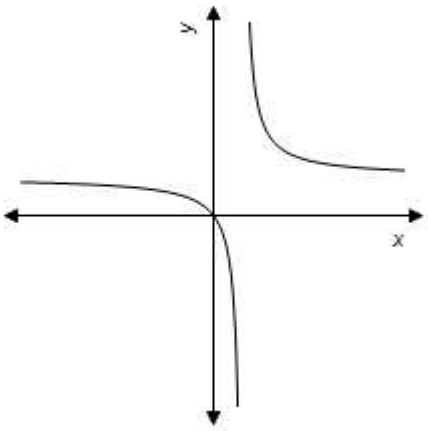
$\frac{11}{5} \leq x < 3$

b.



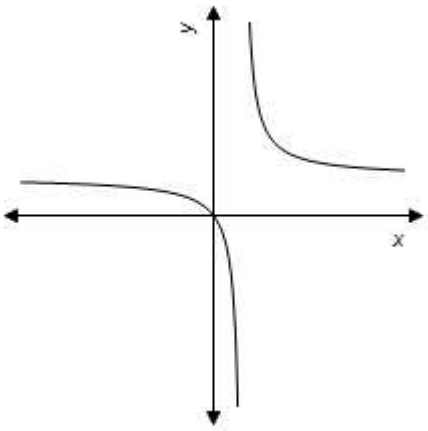
$-3 < x \leq -\frac{11}{5}$

c.



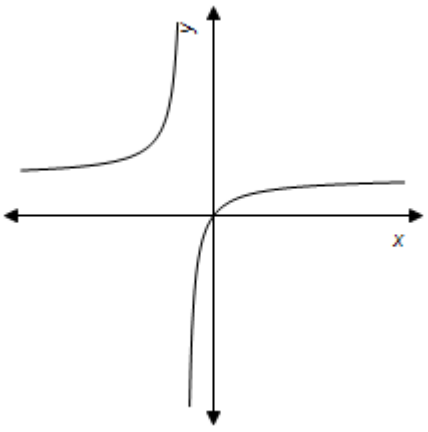
$x < 3, x \geq \frac{33}{7}$

d.



$3 < x \leq \frac{33}{7}$

e.



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Section 1.8 - Other Types of Inequalities

$$-\frac{33}{7} \le x < -3$$

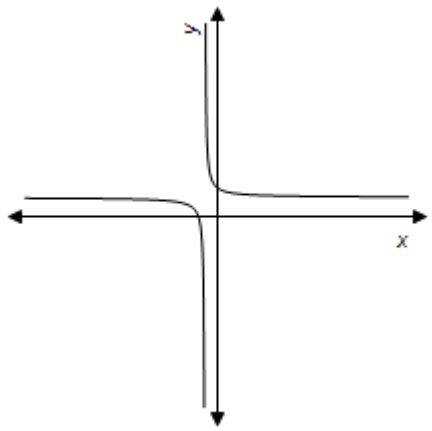
ANSWER: d
POINTS: 1
REFERENCES: 1.8.55
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 6/16/2021 11:03 AM

32. Use a graphing utility to graph the equation. Use the graph to approximate the values of x that satisfy the inequality.

Equation:
$y = \dfrac{3(x-3)}{x+2}$

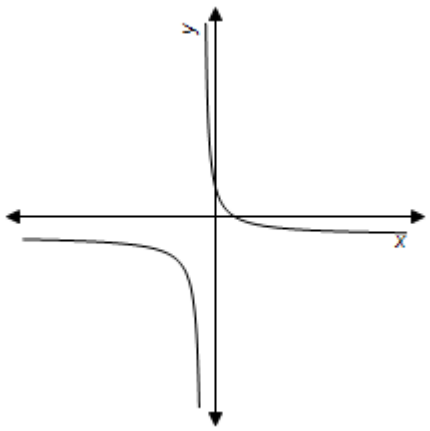
Inequality:
$y \le 0$

a.



$-3 \le x < -2$

b.

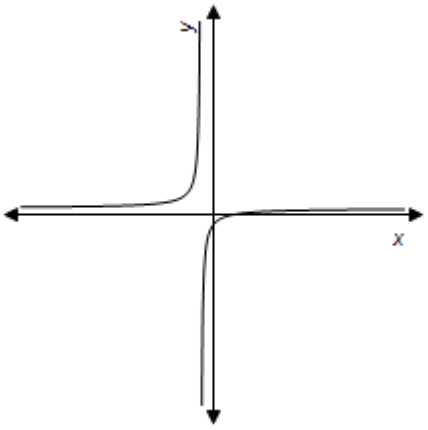


$x < -2$
$x \ge 3$

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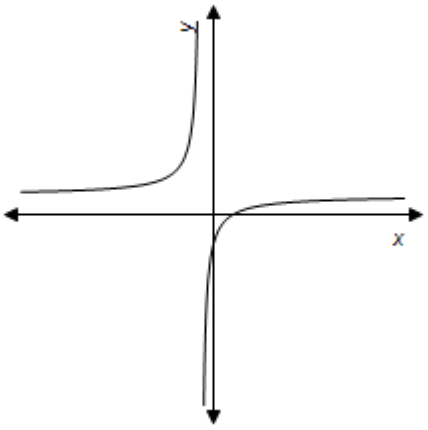
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c.



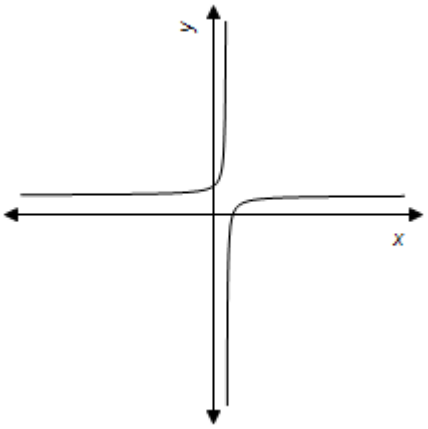
$-2 < x \leq 3$

d.



$-2 < x \leq 3$

e.



$2 < x \leq 3$

ANSWER: d
POINTS: 1
REFERENCES: 1.8.56a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 6/17/2021 2:18 AM

33. Use a graphing utility to graph the equation. Use the graph to approximate the values of x that satisfy the inequality.

Equation:

$$y = \frac{9x^2}{x^2+81}$$

Inequality:

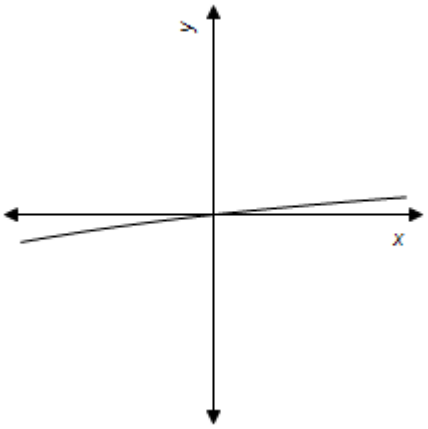
$y \leq 2$

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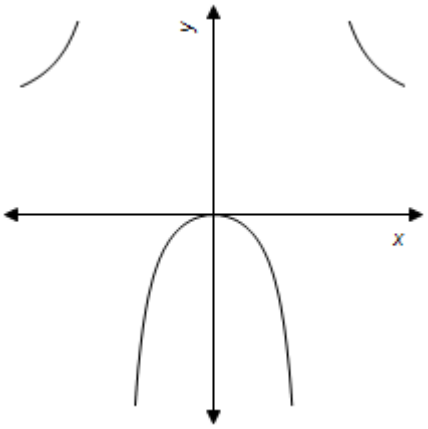
Section 1.8 - Other Types of Inequalities

a.



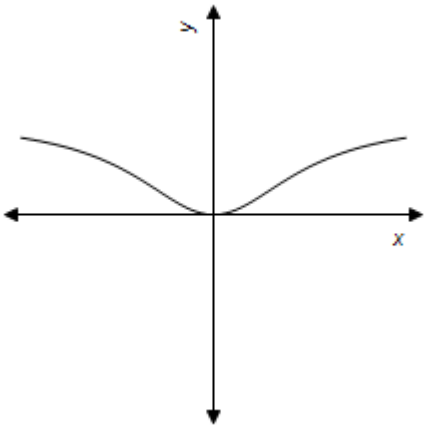
$-81 < x \leq \frac{162}{7}$

b.



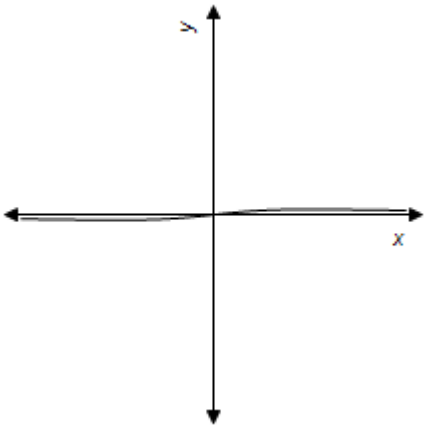
$-9 < x < 9$

c.



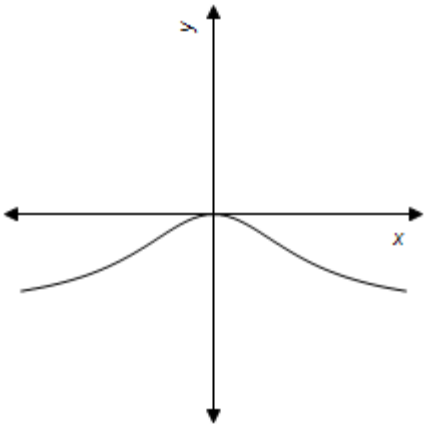
$-9\sqrt{\frac{2}{7}} \leq x \leq 9\sqrt{\frac{2}{7}}$

d.



$-\infty < x < \infty$

e.



$-\infty < x < \infty$

ANSWER: c

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Section 1.8 - Other Types of Inequalities

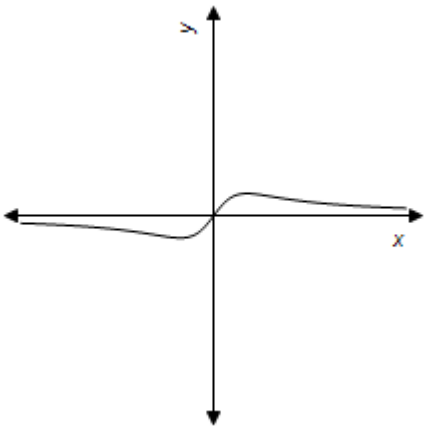
POINTS: 1
REFERENCES: 1.8.57b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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34. Use a graphing utility to graph the equation. Use the graph to approximate the values of x that satisfy the following inequality.

Equation:
$y = \dfrac{4x}{x^2+3}$

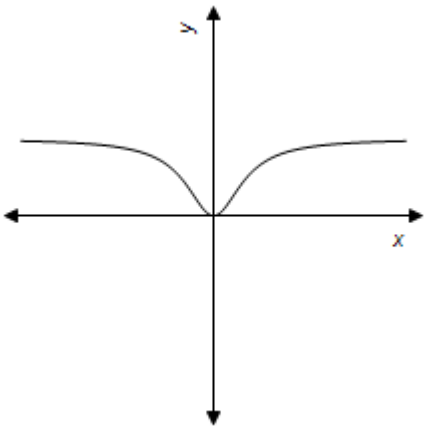
Inequality:
$y \geq 1$

a.



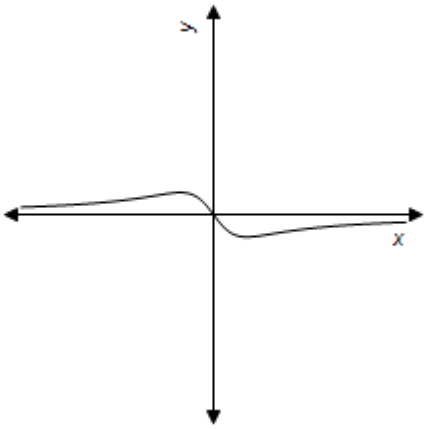
$1 \leq x \leq 3$

b.



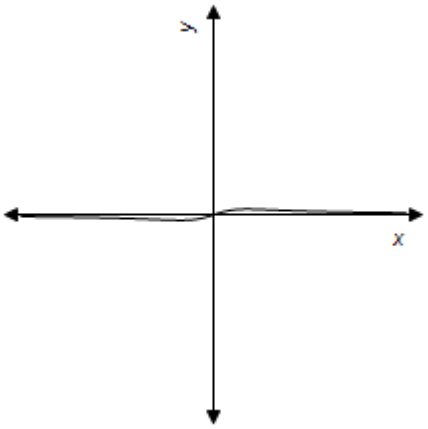
$x \leq -1$
$x \geq 1$

c.



$-3 \leq x \leq -1$

d.

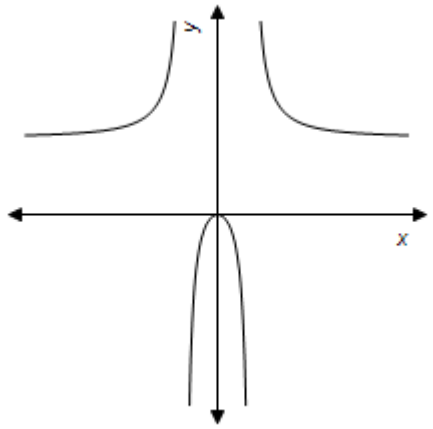


No solutions exist.

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e.



$x < -\sqrt{3}$

$x > \sqrt{3}$

ANSWER: a
POINTS: 1
REFERENCES: 1.8.58a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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35. Find the domain of x in the expression.

$\sqrt{25-x^2}$

a. $(-25, 25)$
b. $[-25, 25]$
c. $(-5, 5)$
d. $[-5, 25)$
e. $[-5, 5]$

ANSWER: e
POINTS: 1
REFERENCES: 1.8.59
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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36. Find the domain of x in the expression.

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Section 1.8 - Other Types of Inequalities

$\sqrt{x^2-4}$

a. $(-\infty, 2] \cap [2, \infty)$
b. $(-\infty, -2] \cup [2, \infty)$
c. $(-\infty, -2] \cap [2, \infty)$
d. $(-\infty, 2] \cup [2, \infty)$
e. $(-\infty, -2) \cup [2, \infty)$

ANSWER: b
POINTS: 1
REFERENCES: 1.8.60
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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DATE MODIFIED: 5/13/2015 8:46 AM

37. Find the domain of x in the expression.

$\sqrt{x^2-9x+20}$

a. $(-\infty, 4] \cup [5, \infty)$
b. $(-\infty, 4] \cap [5, \infty)$
c. $(-\infty, -5] \cup [-4, \infty)$
d. $[4,5]$
e. $(-\infty, \infty)$

ANSWER: a
POINTS: 1
REFERENCES: 1.8.61
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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38. Find the domain of x in the expression.

$\sqrt{16-9x^2}$

a. $(-\infty, \infty)$
b. $(-\infty, -4/3] \cup [4/3, \infty)$

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c. $\left[-\frac{4}{3}, \frac{4}{3}\right]$

d. $\left[-\frac{3}{4}, \frac{3}{4}\right]$

e. $[0, \infty)$

ANSWER: c
POINTS: 1
REFERENCES: 1.8.62
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 6/17/2021 4:00 AM

39. Find the domain of x in the expression.

$$\sqrt{\frac{x}{x^2-2x-24}}$$

a. $(-4, 0] \cap (6, \infty)$

b. $(-6, 0] \cup (4, \infty)$

c. $(-4, 0] \cup (6, \infty)$

d. $(-4, 0] \cup (-6, \infty)$

e. $(-6, 0] \cap (-4, \infty)$

ANSWER: c
POINTS: 1
REFERENCES: 1.8.63
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 9/25/2014 4:52 AM

40. Find the domain of x in the expression.

$$\sqrt{\frac{x}{x^2-36}}$$

a. $(-36, 0] \cup (36, \infty)$

b. $(-6, 0] \cup [6, \infty)$

c. $(-36, 0] \cap (6, \infty)$

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d. $(-6, 0] \cup (6, \infty)$

e. $(-36, 0] \cap [6, \infty)$

ANSWER: d
POINTS: 1
REFERENCES: 1.8.64
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
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41. Use the position equation $s = -16t^2 + v_0 t + s_0$, where s represents the height of an object (in feet), v_0 represents the initial velocity of the object (in feet per second), s_0 represents the initial height of the object (in feet), and t represents the time (in seconds).
A projectile is fired straight upward from ground level $(s_0 = 0)$ with an initial velocity of 176 feet per second. At what instant will it be back at ground level?

a. $t = 11$ Sec
b. $t = 16$ Sec
c. $t = 13$ Sec
d. $t = 12$ Sec
e. $t = 10$ Sec

ANSWER: a
POINTS: 1
REFERENCES: 1.8.71a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 6/17/2021 4:10 AM

42. Use the position equation $s = -16t^2 + v_0 t + s_0$, where s represents the height of an object (in feet), v_0 represents the initial velocity of the object (in feet per second), s_0 represents the initial height of the object (in feet), and t represents the time (in seconds).
A projectile is fired straight upward from ground level $(s_0 = 0)$ with an initial velocity of 160 feet per second. At what instant will it be back at ground level?

a. $t = 8$ Sec
b. $t = 10$ Sec
c. $t = 12$ Sec
d. $t = 11$ Sec
e. $t = 9$ Sec

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Section 1.8 - Other Types of Inequalities

ANSWER: b
POINTS: 1
REFERENCES: 1.8.72a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/16/2015 3:10 AM

43. A rectangular playing field with a perimeter of 100 meters is to have an area of at least 504 square meters. Within what bounds must the length of the rectangle lie?

a. $15m \leq L \leq 504m$
b. $36m \leq L \leq 100m$
c. $14m \leq L \leq 36m$
d. $16m \leq L \leq 38m$
e. $15m < L < 504m$

ANSWER: c
POINTS: 1
REFERENCES: 1.8.73
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 6/17/2021 4:20 AM

44. A rectangular parking lot with a perimeter of 438 feet is to have an area of at least 7700 square feet. Within what bounds must the length of the rectangle lie?

a. $438\text{ft} \leq L \leq 7700\text{ft}$
b. $46\text{ft} \leq L \leq 177\text{ft}$
c. $47\text{ft} \leq L \leq 178\text{ft}$
d. $45\text{ft} \leq L \leq 7700\text{ft}$
e. $44\text{ft} \leq L \leq 175\text{ft}$

ANSWER: e
POINTS: 1
REFERENCES: 1.8.74
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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45. The numbers N (in millions) of students enrolled in schools in the United States from 1995 through 1997 are

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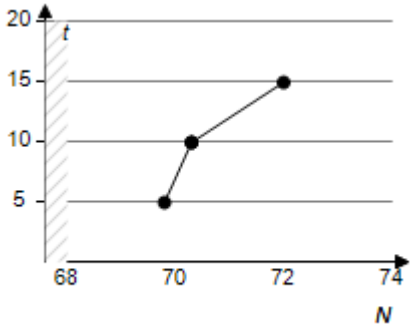
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shown in the table.

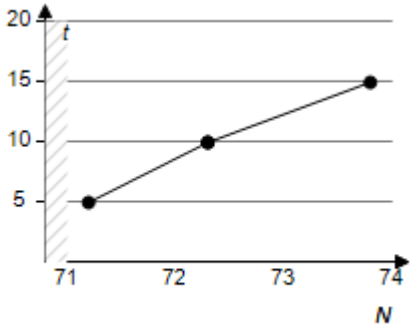
Year	Number, N
1995	69.8
1996	70.3
1997	72

Use a graphing utility to create a scatter plot of the data. Let t represent the year, with $t = 5$ corresponding to 1995, $t = 10$ corresponding to 1996, and $t = 15$ corresponding to 1997.

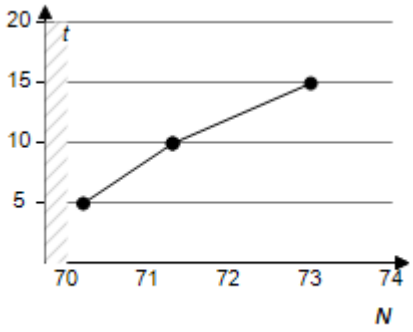
a.



b.



c.

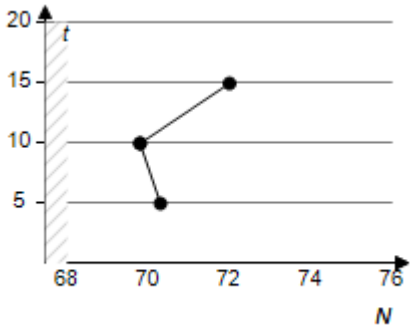


d.

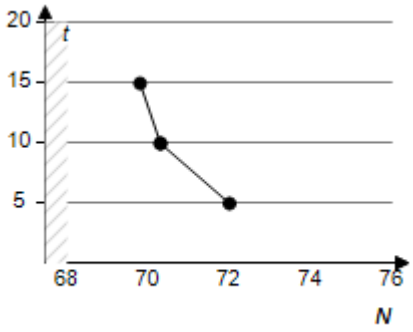
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Section 1.8 - Other Types of Inequalities



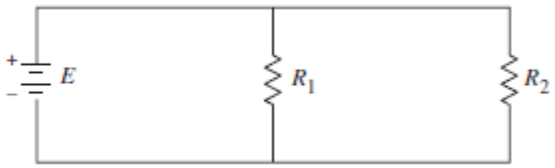
e.



ANSWER: a
POINTS: 1
REFERENCES: 1.8.77a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 6/17/2021 5:05 AM

46. When two resistors of resistances R_1 and R_2 are connected in parallel (see figure), the total resistance R satisfies the equation

$$\frac{1}{R} = \frac{1}{R_1} + \frac{1}{R_2}.$$



Find R_1 for a parallel circuit in which $R_2 = 7$ ohms and R must be at least 1 ohm.

a. $R_1 \leq 7$ ohms
b. $R_1 < 7$ ohms
c. $R_1 \geq \frac{7}{6}$ ohms

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d. $R_1 > 7$ ohms

e. $R_1 = \frac{7}{6}$ ohms

ANSWER: c
POINTS: 1
REFERENCES: 1.8.79
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
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47. Determine whether the statement is true or false. Justify your answer.

The solution set of the inequality $\frac{7}{2}x^2 + 7x + 14 \geq 0$ is the entire set of real numbers.

a. False, the y -values are less than zero for all values of x.
b. True, the y -values are greater than zero for all values of x.

ANSWER: b
POINTS: 1
REFERENCES: 1.8.82
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 6/17/2021 6:16 AM

48. Find the interval(s) for b such that the following equation has at least one real solution

$x^2 + bx + 8 = 0$.

a. $(-\infty, -4\sqrt{2}] \cup [4\sqrt{2}, \infty)$
b. $(-\infty, -4\sqrt{2}] \cap [4\sqrt{2}, \infty)$
c. $(-\infty, -4\sqrt{2}) \cup (4\sqrt{2}, \infty)$
d. $(-\infty, -4\sqrt{2}) \cup [-4\sqrt{2}, \infty)$
e. $(-\infty, 4\sqrt{2}] \cap [4\sqrt{2}, \infty)$

ANSWER: a
POINTS: 1
REFERENCES: 1.8.83a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic

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Section 1.8 - Other Types of Inequalities

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49. Find the interval(s) for b such that the following equation has at least one real solution and write a conjecture about the interval(s) based on the values of the coefficients

$4x^2 + bx + 13 = 0$.

a. $(-\infty, -2\sqrt{52}] \cup [2\sqrt{52}, \infty)$
If $a > 0$ and $c > 0$, $b \le -2\sqrt{ac}$ or $b \ge 2\sqrt{ac}$

b. $(-\infty, -2\sqrt{52}] \cup [-2\sqrt{52}, \infty)$
If $a > 0$ and $c < 0$, $b \le -2\sqrt{ac}$ or $b \ge 2\sqrt{ac}$

c. $(-\infty, 2\sqrt{52}] \cup [2\sqrt{52}, \infty)$
If $a > 0$ and $c > 0$, b is all real numbers.

d. $(-\infty, 2\sqrt{52}] \cap [2\sqrt{52}, \infty)$
If $a < 0$ and $c > 0$, $b \le -2\sqrt{ac}$ or $b \ge 2\sqrt{ac}$

e. $(-\infty, -2\sqrt{52}] \cap [2\sqrt{52}, \infty)$
If $a < 0$ and $c < 0$, b is all real numbers.

ANSWER: a
POINTS: 1
REFERENCES: 1.8.85
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
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50. Find the interval(s) for b such that the equation has at least one real solution and write a conjecture about the interval(s) based on the values of the coefficients

$4x^2 + bx + 7 = 0$.

a. $(-\infty, -2\sqrt{28}] \cap [2\sqrt{28}, \infty)$
If $a > 0$ and $c < 0$, $b \ge -2\sqrt{ac}$

b. $(-\infty, -2\sqrt{28}] \cup [-2\sqrt{28}, \infty)$
If $a < 0$ and $c > 0$, $b \le 2\sqrt{ac}$

c. $(-\infty, -2\sqrt{28}] \cup [2\sqrt{28}, \infty)$
If $a > 0$ and $c > 0$, $b \le -2\sqrt{ac}$ or $b \ge 2\sqrt{ac}$

d. $(-\infty, 2\sqrt{28}] \cup [2\sqrt{28}, \infty)$
If $a > 0$ and $c > 0$, b is all real numbers

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e. $(-\infty, -2\sqrt{28}] \cap [2\sqrt{28}, \infty)$

If $a < 0$ and $c < 0$, $b \leq 2\sqrt{ac}$

ANSWER: c
POINTS: 1
REFERENCES: 1.8.86
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 6/17/2021 6:32 AM

51. Determine the intervals on which the following polynomial is entirely negative and those on which it is entirely positive.
$-x^2 - 10x - 9$

a. entirely negative: $(-\infty, 4)$; entirely positive: $(4, \infty)$
b. entirely negative: $(-\infty, -9), (-1, 4)$; entirely positive: $(-9, -1)$
c. entirely negative: $(-\infty, -9), (-1, \infty)$; entirely positive: $(-9, -1)$
d. entirely negative: $(-9, 4)$; entirely positive: $(4, \infty)$
e. entirely negative: $(-\infty, 0)$; entirely positive: $(0, \infty)$

ANSWER: c
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 47-52
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.106 - Identify intervals where graph is entirely positive and/or negative
TOPICS: 2.6
KEYWORDS: 2.6.52
NOTES: Skill
DATE CREATED: 6/10/2014 4:17 PM
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52. Solve: $x^2 - 2x - 15 < 0$.

a. $(-\infty, -2)$
b. $(-3, \infty)$
c. $(-3, 5)$
d. $(-\infty, 5)$
e. $(5, \infty)$

ANSWER: c

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Section 1.8 - Other Types of Inequalities

POINTS: 1
DIFFICULTY: Medium
REFERENCES: 53-62
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.104 - Solve inequality
TOPICS: 2.6
KEYWORDS: 2.6.60
NOTES: Skill
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53. Solve the inequality $36x - x^3 < 0$ and write the solution set in interval notation.

a. $(-\infty, -6) \cup (0, 6)$
b. $(-6, 6)$
c. $(-\infty, 6)$
d. $(-6, 0) \cup (6, \infty)$
e. $(-\infty, \infty)$

ANSWER: d
POINTS: 1
DIFFICULTY: Medium
REFERENCES: 53-62
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.104 - Solve inequality
TOPICS: 2.6
KEYWORDS: 2.6.61
NOTES: Skill
DATE CREATED: 6/10/2014 4:17 PM
DATE MODIFIED: 5/16/2015 3:26 AM

54. Find the domain of x in the following expression.
$\sqrt[3]{x^4 - 625}$

a. $[-5, 5]$
b. $(-\infty, 5) \cup (5, \infty)$
c. $[5, \infty)$
d. $(5, \infty)$
e. all real numbers

ANSWER: e

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Section 1.8 - Other Types of Inequalities

POINTS:	1
DIFFICULTY:	Medium
REFERENCES:	73-78
QUESTION TYPE:	Multi-Mode (Multiple choice)
HAS VARIABLES:	True
STUDENT ENTRY MODE:	Basic
LEARNING OBJECTIVES:	PREC.LARS.16.107 - Solve for the domain of an expression
TOPICS:	2.6
KEYWORDS:	2.6.76
NOTES:	Skill
DATE CREATED:	6/10/2014 4:17 PM
DATE MODIFIED:	9/25/2014 9:53 AM

55. Find the domain of x in the expression $\sqrt{16-x^2}$.

a. $(-\infty, -4] \cup [4, \infty)$

b. $(-\infty, 4]$

c. $[-4, 4]$

d. $[-4, \infty)$

e. $(-\infty, \infty)$

ANSWER:	c
POINTS:	1
DIFFICULTY:	Medium
REFERENCES:	73-78
QUESTION TYPE:	Multi-Mode (Multiple choice)
HAS VARIABLES:	True
STUDENT ENTRY MODE:	Basic
LEARNING OBJECTIVES:	PREC.LARS.16.107 - Solve for the domain of an expression
TOPICS:	2.6
KEYWORDS:	2.6.73
NOTES:	Skill
DATE CREATED:	6/10/2014 4:17 PM
DATE MODIFIED:	5/16/2015 3:27 AM

56. Find the domain of x in the expression $\sqrt[4]{x^3-13x}$.

a. $(-\infty, -\sqrt{13}] \cup [\sqrt{13}, \infty)$

b. $(-\infty, \sqrt{13}] \cup [\sqrt{13}, \infty)$

c. $[-\sqrt{13}, 0] \cup [\sqrt{13}, \infty)$

d. $[-\sqrt{13}, \sqrt{13}]$

e. $(-\infty, -\sqrt{13}) \cup (0, \sqrt{13})$

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Section 1.8 - Other Types of Inequalities

ANSWER:	c
POINTS:	1
QUESTION TYPE:	Multi-Mode (Multiple choice)
HAS VARIABLES:	True
STUDENT ENTRY MODE:	Basic
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