Trigonometry 11th edition Larson Test Bank

SKU: 9780357455210-TEST-BANK

Section 1.1 - Radian and Degree Measure

1. Find (if possible) the complement of the following angle.

$\frac{\pi}{3}$

a. Complement: π
b. Complement: $-\frac{\pi}{3}$
c. Complement: $\frac{\pi}{6}$
d. Complement: $\frac{\pi}{3}$
e. Complement: $\frac{3}{\pi}$

ANSWER: c
POINTS: 1
REFERENCES: 4.1.31a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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2. Find (if possible) the supplement of the following angle.

$\frac{\pi}{7}$

a. Supplement: $\frac{7}{6\pi}$
b. Supplement: $-\frac{\pi}{7}$
c. Supplement: π
d. Supplement: $\frac{\pi}{7}$
e. Supplement: $\frac{6\pi}{7}$

ANSWER: e
POINTS: 1
REFERENCES: 4.1.32a
QUESTION TYPE: Multi-Mode (Multiple choice)
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Section 1.1 - Radian and Degree Measure

3. Find the complement of the following angle. Round your answer to two decimal places.

1.1

a. Complement ≈ 1.1
b. Complement ≈ 0.47
c. Complement ≈ 4.04
d. Complement ≈ 2.04
e. Complement ≈ 2.51

ANSWER: b
POINTS: 1
REFERENCES: 4.1.34b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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4. Find the quadrant in which the given angle lies.

116°

a. Quadrant I
b. Quadrant IV
c. Quadrant III
d. Quadrant II
e. None of the above

ANSWER: d
POINTS: 1
REFERENCES: 4.1.41a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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5. Find the quadrant in which the given angle lies.

–128° 50'

a. Quadrant III
b. Quadrant I
c. Quadrant IV
d. Quadrant II
e. None of the above

ANSWER: a

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POINTS: 1
REFERENCES: 4.1.43a
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6. Find the quadrant in which the given angle lies.

$-13°$

a. Quadrant I
b. Quadrant II
c. Quadrant IV
d. Quadrant III
e. None of the above

ANSWER: c
POINTS: 1
REFERENCES: 4.1.44b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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7. Find the complement of the following angle.

$14°$

a. Complement: $242°$
b. Complement: $14°$
c. Complement: $76°$
d. Complement: $166°$
e. Complement: $77°$

ANSWER: c
POINTS: 1
REFERENCES: 4.1.53a
QUESTION TYPE: Multi-Mode (Multiple choice)
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8. Find the supplement of the following angle.

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Section 1.1 - Radian and Degree Measure

148°

a. Supplement: 212°
b. Supplement: 148°
c. Supplement: 32°
d. Supplement: 58°
e. Supplement: 33

ANSWER: c
POINTS: 1
REFERENCES: 4.1.54b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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9. Find angle 45° in radian measure as a multiple of π.

a. $\frac{4\pi}{3}$
b. $\frac{\sqrt{2}}{\pi}$
c. 4π
d. $\frac{\pi}{4}$
e. $\frac{\pi\sqrt{2}}{2}$

ANSWER: d
POINTS: 1
REFERENCES: 4.1.57a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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10. Find angle –20° in radian measure as a multiple of π.

a. 9π
b. $\frac{\pi\sqrt{2}}{2}$

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c. $-\frac{\pi}{9}$

d. $\frac{\pi\sqrt{3}}{3}$

e. $\frac{\pi}{9}$

ANSWER: c
POINTS: 1
REFERENCES: 4.1.59a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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11. Find angle $\frac{3\pi}{2}$ in degree measure.

a. 270°
b. 275°
c. 145°
d. 135°
e. 245°

ANSWER: a
POINTS: 1
REFERENCES: 4.1.61a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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12. Find angle $\frac{\pi}{9}$ in degree measure.

a. 15°
b. 10°
c. 25°
d. 20°
e. 55°

ANSWER: d
POINTS: 1
REFERENCES: 4.1.62b
QUESTION TYPE: Multi-Mode (Multiple choice)

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13. Convert the angle measure from degrees to radians. Round your answer to three decimal places.

90°

a. $90° \approx 1.471$ radians
b. $90° \approx 9.549$ radians
c. $90° \approx 0.090$ radian
d. $90° \approx 1.871$ radians
e. $90° \approx 1.571$ radians

ANSWER: e
POINTS: 1
REFERENCES: 4.1.65
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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14. Convert the angle measure from degrees to radians. Round to three decimal places.

–206.4°

a. $-206.4° \approx -3.902$ radians
b. $-206.4° \approx -3.502$ radians
c. $-206.4° \approx -3.602$ radians
d. $-206.4° \approx 3.502$ radians
e. $-206.4° \approx 3.602$ radians

ANSWER: c
POINTS: 1
REFERENCES: 4.1.67
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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15. Convert the angle measure from degrees to radians. Round to three decimal places.

323°

a. $323° \approx 5.637$ radians

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b. 323° ≈ 6.937 radians
c. 323° ≈ 5.537 radians
d. 323° ≈ 5.937 radians
e. 323° ≈ 0.323 radians

ANSWER: a
POINTS: 1
REFERENCES: 4.1.70
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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16. Convert the angle measure from degrees to radians. Round to three decimal places.

–0.51°

a. –0.51° ≈ –0.309 radian
b. –0.51° ≈ –0.091 radian
c. –0.51° ≈ –0.009 radian
d. –0.51° ≈ –1.309 radians
e. –0.51° ≈ –1.009 radians

ANSWER: c
POINTS: 1
REFERENCES: 4.1.71
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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17. Convert the angle measure from radians to degrees. Round to three decimal places.

$\frac{\pi}{9}$

a. $\frac{\pi}{9} = 20°$
b. $\frac{\pi}{9} = 25°$
c. $\frac{\pi}{9} = 10°$
d. $\frac{\pi}{9} = 15°$
e. $\frac{\pi}{9} = 55°$

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ANSWER: a
POINTS: 1
REFERENCES: 4.1.73
QUESTION TYPE: Multi-Mode (Multiple choice)
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18. Convert the angle measure from radians to degrees. Round to three decimal places.

$\frac{20\pi}{9}$

a. $\frac{20\pi}{9} = 400°$

b. $\frac{20\pi}{9} = 410.5°$

c. $\frac{20\pi}{9} = 394.6°$

d. $\frac{20\pi}{9} = 389.7°$

e. $\frac{20\pi}{9} = 405.6°$

ANSWER: a
POINTS: 1
REFERENCES: 4.1.76
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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19. Convert the angle measure from radians to degrees. Round to three decimal places.

–6

a. $-6 \approx -354.075°$
b. $-6 \approx -349.175°$
c. $-6 \approx -343.775°$
d. $-6 \approx -333.275°$
e. $-6 \approx -338.175°$

ANSWER: c
POINTS: 1

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REFERENCES: 4.1.79
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20. Convert angle measure to decimal degree form. Round your answer to three decimal places.

298°39'

a. 298°39' ≈ 337°
b. 298°39' ≈ 298.39°
c. 298°39' ≈ 308.65°
d. 298°39' ≈ 298.65°
e. 298°39' ≈ 288.65°

ANSWER: d
POINTS: 1
REFERENCES: 4.1.82a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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21. Convert angle measure to decimal degree form. Round your answer to three decimal places.

$81° 19' 28''$

a. $81° 19' 28'' \approx 81.324°$
b. $81° 19' 28'' \approx 81.193°$
c. $81° 19' 28'' \approx 91.324°$
d. $81° 19' 28'' \approx 128°$
e. $81° 19' 28'' \approx 71.324°$

ANSWER: a
POINTS: 1
REFERENCES: 4.1.83a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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22. Convert following angle measure to degrees, minutes, and seconds.

218.7°

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a. $218.7° \approx 218°7'$
b. $218.7° \approx 218°42'$
c. $218.7° \approx 218°40'$
d. $218.7° \approx 218°44'$
e. $218.7° \approx 218°41'$

ANSWER: b
POINTS: 1
REFERENCES: 4.1.85a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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23. Convert following angle measure to degrees, minutes, and seconds.

$-309.120°$

a. $-309.120° \approx -309° 12' 7''$
b. $-309.120° \approx -309° 4' 17''$
c. $-309.120° \approx -309° 7' 12''$
d. $-309.120° \approx -309° 17' 4''$
e. $-309.120° \approx -309° 4' 12''$

ANSWER: c
POINTS: 1
REFERENCES: 4.1.86a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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24. Find the length of the arc on a circle of radius r intercepted by a central angle θ. Round to two decimal places.

Radius r	*Central Angle θ*
15 inches	123°

a. $s \approx 32.20$ inches
b. $s \approx 15.68$ inches
c. $s \approx 10.25$ inches
d. $s \approx 34.20$ inches
e. $s \approx 30.20$ inches

ANSWER: a

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POINTS: 1
REFERENCES: 4.1.89
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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25. Find the length of the arc on a circle of radius r intercepted by a central angle θ. Round to two decimal places.

Radius r	*Central Angle θ*
15 centimeters	66°

a. $s \approx 19.28$ centimeters
b. $s \approx 15.37$ centimeters
c. $s \approx 17.28$ centimeters
d. $s \approx 5.50$ centimeters
e. $s \approx 15.28$ centimeters

ANSWER: c
POINTS: 1
REFERENCES: 4.1.92
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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26. Find the radian measure of the central angle of a circle of radius r that intercepts an arc of length s.

Radius r	*Arc Length s*
6 inches	20 inches

a. $\theta = 120$ radians
b. $\theta = \frac{3}{10}$ radians
c. $\theta = \frac{3}{13}$ radians
d. $\theta = \frac{10}{3}$ radians
e. $\theta = 26$ radians

ANSWER: d
POINTS: 1
REFERENCES: 4.1.93
QUESTION TYPE: Multi-Mode (Multiple choice)
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Section 1.1 - Radian and Degree Measure

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27. Find the radian measure of the central angle of a circle of radius r that intercepts an arc of length s.

Radius r	*Arc Length s*
80 kilometers	145 kilometers

a. $\theta = 6$ radians
b. $\theta = \frac{29}{45}$ radians
c. $\theta = \frac{45}{29}$ radians
d. $\theta = \frac{29}{16}$ radians
e. $\theta = \frac{16}{29}$ radians

ANSWER: d
POINTS: 1
REFERENCES: 4.1.96
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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28. Find the area of the sector of the circle with radius r and central angle θ. Round to two decimal places.

Radius r	*Central Angle θ*
4 inches	$\frac{\pi}{8}$

a. $A \approx 12.57$ square inches
b. $A \approx 5.14$ square inches
c. $A \approx 6.28$ square inches
d. $A \approx 1.14$ square inches
e. $A \approx 3.14$ square inches

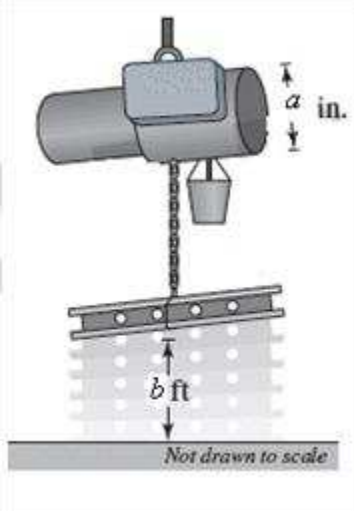
ANSWER: e
POINTS: 1
REFERENCES: 4.1.101
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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29. An electric hoist is being used to lift a beam. The diameter of the drum on the hoist is 16 inches, and the beam must be raised 2 feet. Find the number of degrees through which the drum must rotate. Round your answer to nearest whole number.



$a = 16, b = 2$

a. $\theta \approx 177°$
b. $\theta \approx 172°$
c. $\theta \approx 162°$
d. $\theta \approx 167°$
e. $\theta \approx 192°$

ANSWER: b
POINTS: 1
REFERENCES: 4.1.110
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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30. A carousel with a 60-foot diameter makes 2 revolutions per minute. Find the angular speed of the carousel in radians per minute. Round your answer to two decimal places.

a. 2 rpm ≈ 61.85 radians per minute
b. 2 rpm ≈ 12.57 radians per minute
c. 2 rpm ≈ 18.85 radians per minute
d. 2 rpm ≈ 6.28 radians per minute
e. 2 rpm ≈ 58.23 radians per minute

ANSWER: b
POINTS: 1
REFERENCES: 4.1.112a
QUESTION TYPE: Multi-Mode (Multiple choice)

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Section 1.1 - Radian and Degree Measure

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31. A sprinkler on a golf green is set to spray water over a distance of 12 meters and to rotate through an angle of 130°. Find the area of the region. Round your answer to two decimal places.

a. $A \approx 163.36$ square meters
b. $A \approx 165.66$ square meters
c. $A \approx 161.26$ square meters
d. $A \approx 326.73$ square meters
e. $A \approx 27.23$ square meters

ANSWER: a
POINTS: 1
REFERENCES: 4.1.117
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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32. Determine the quadrant in which an angle, θ, lies if $\theta = \frac{14\pi}{13}$.

a. 4th quadrant
b. 2nd quadrant
c. 1st quadrant
d. 3rd quadrant

ANSWER: d
POINTS: 1
REFERENCES: 4.1.17b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:22 PM
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33. Determine the quadrant in which an angle, θ, lies if $\theta = 5.00$ radians.

a. 2nd quadrant
b. 4th quadrant
c. 3rd quadrant
d. 1st quadrant

ANSWER: b

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POINTS: 1
REFERENCES: 4.1.21b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:22 PM
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34. Determine two coterminal angles (one minimum positive and one maximum negative) for $\theta = \frac{5\pi}{6}$.

a. $\frac{19\pi}{6}, -\frac{17\pi}{6}$

b. $\frac{13\pi}{6}, -\frac{7\pi}{6}$

c. $\frac{11\pi}{6}, -\frac{13\pi}{6}$

d. $\frac{5\pi}{3}, -\frac{7\pi}{18}$

e. $\frac{17\pi}{6}, -\frac{7\pi}{6}$

ANSWER: e
POINTS: 1
REFERENCES: 4.1.29a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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35. Find (if possible) the complement of $\frac{\pi}{13}$.

a. $\frac{6\pi}{13}$

b. $\frac{5\pi}{13}$

c. $\frac{11\pi}{26}$

d. $\frac{12\pi}{13}$

e. not possible

ANSWER: c
POINTS: 1

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REFERENCES: 4.1.31a
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36. Find (if possible) the supplement of $\frac{3\pi}{4}$.

a. $\frac{3\pi}{8}$
b. $\frac{7\pi}{8}$
c. $\frac{\pi}{4}$
d. $\frac{5\pi}{16}$
e. not possible

ANSWER: c
POINTS: 1
REFERENCES: 4.1.32b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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37. Determine the quadrant in which an angle with measure 114° lies.
a. 4th quadrant
b. 2nd quadrant
c. 3rd quadrant
d. 1st quadrant

ANSWER: b
POINTS: 1
REFERENCES: 4.1.41a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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38. Determine the quadrant in which an angle with measure –176°2′ lies.
a. 3rd quadrant

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b. 2nd quadrant
c. 1st quadrant
d. 4th quadrant

ANSWER: a
POINTS: 1
REFERENCES: 4.1.43a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:22 PM
DATE MODIFIED: 11/19/2014 6:46 AM

39. Determine two coterminal angles (one minimum positive and one maximum negative) for $\theta = -489°$.

a. 141°, –219°
b. 321°, –399°
c. 231°, –309°
d. 141°, –309°
e. 231°, –129°

ANSWER: e
POINTS: 1
REFERENCES: 4.1.51b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:22 PM
DATE MODIFIED: 6/18/2021 8:02 AM

40. Rewrite 95° in radian measure as a multiple of π.

a. $\frac{19\pi}{12}$
b. $\frac{19\pi}{36}$
c. $\frac{19\pi}{2}$
d. $\frac{19\pi}{6}$
e. $\frac{19\pi}{9}$

ANSWER: b
POINTS: 1
REFERENCES: 4.1.58a
QUESTION TYPE: Multiple Choice

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41. Rewrite $\frac{5\pi}{3}$ in degree measure.

a. 300°
b. 450°
c. 600°
d. 150°
e. 200°

ANSWER: a
POINTS: 1
REFERENCES: 4.1.62a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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42. Rewrite $\frac{4\pi}{25}$ in degree measure. Round to three decimal places.

a. 28.800°
b. 43.200°
c. 36.000°
d. 7.200°
e. 14.400°

ANSWER: a
POINTS: 1
REFERENCES: 4.1.64b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:22 PM
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43. Rewrite –219.80° in radian measure. Round to three decimal places.

a. –0.767
b. –0.691
c. –0.460
d. –0.575
e. –3.836

ANSWER: e
POINTS: 1

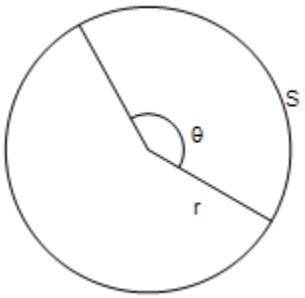
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Section 1.1 - Radian and Degree Measure

REFERENCES: 4.1.67
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:22 PM
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44. Find the angle, in radians, in the figure below if $S = 13$ and $r = 5$.



a. $\frac{13\pi}{5}$

b. $\frac{5}{13}$

c. $\frac{13}{5}$

d. $\frac{5\pi}{13}$

e. $\frac{18\pi}{5}$

ANSWER: c
POINTS: 1
REFERENCES: 4.1.98
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:22 PM
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45. Convert 134°24′40′′ to degree-decimal form. Round answer to three decimal places.

a. 134.406°
b. 134.411°
c. 134.844°
d. 134.203°
e. 134.206°

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ANSWER: b
POINTS: 1
REFERENCES: 4.1.83a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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46. Convert 185.447° to $D°M'S''$ form.

a. 185°13′25′′
b. 185°22′41′′
c. 185°20′37′′
d. 185°6′12′′
e. 185°26′49′′

ANSWER: e
POINTS: 1
REFERENCES: 4.1.83b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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47. Find the length of the arc, S, on a circle of radius 6 meters intercepted by a central angle of 90°. Round to two decimal places.

a. $S = 9.42$ meters
b. $S = 12.57$ meters
c. $S = 18.85$ meters
d. $S = 6.28$ meters
e. $S = 7.54$ meters

ANSWER: a
POINTS: 1
REFERENCES: 4.1.91
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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48. Find the radian measure of the central angle of the circle of radius 6 centimeters that intercepts an arc of length 32 centimeters.

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Section 1.1 - Radian and Degree Measure

a. $\theta = \frac{16}{3}$

b. $\theta = \frac{2}{3}$

c. $\theta = \frac{3}{16}$

d. $\theta = \frac{32}{7}$

e. $\theta = \frac{6}{5}$

ANSWER: a
POINTS: 1
REFERENCES: 4.1.95
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:22 PM
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49. Find the area of the sector of the circle with radius 2 centimeters and central angle $\frac{10\pi}{6}$.

a. $A = \frac{5\pi}{3}$ cm^2

b. $A = \frac{100\pi}{3}$ cm^2

c. $A = \frac{10\pi}{3}$ cm^2

d. $A = \frac{5\pi}{2}$ cm^2

e. $A = \frac{20\pi}{3}$ cm^2

ANSWER: c
POINTS: 1
REFERENCES: 4.1.101
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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50. A car is traveling along Route 66 at a rate of 55 miles per hour, and the diameter of its wheels are 2.7 feet.

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Find the number of revolutions per minute the wheels are turning. Round answer to one decimal place.

a. 285.3 rpm
b. 845.3 rpm
c. 570.6 rpm
d. 108.1 rpm
e. 190.2 rpm

ANSWER: c
POINTS: 1
REFERENCES: 4.1.115a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:22 PM
DATE MODIFIED: 11/18/2014 10:34 AM

51. Determine the quadrant in which an angle, θ, lies if $\theta = \frac{16\pi}{15}$.

a. 1st quadrant
b. 2nd quadrant
c. 3rd quadrant
d. 4th quadrant

ANSWER: c
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:22 PM
DATE MODIFIED: 11/18/2014 10:44 AM

52. Determine the quadrant in which an angle, θ, lies if $\theta = 5.10$ radians.

a. 1st quadrant
b. 2nd quadrant
c. 3rd quadrant
d. 4th quadrant

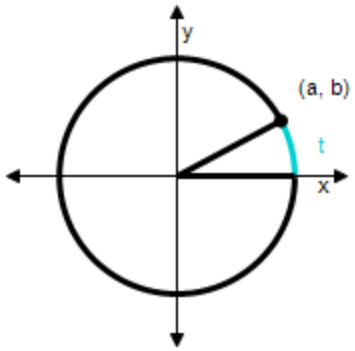
ANSWER: d
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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Section 1.2 - Trigonometrinc Functions: The Unit Circles

1. Find the exact values of the three trigonometric functions sine, cosine, tangent of the real number *t*.



$a = \frac{15}{17}, \ b = \frac{8}{17}$

a. $\sin t = \frac{8}{17}$
$\cos t = \frac{8}{15}$
$\tan t = \frac{15}{17}$

b. $\sin t = \frac{15}{17}$
$\cos t = \frac{8}{17}$
$\tan t = \frac{8}{15}$

c. $\sin t = \frac{17}{15}$
$\cos t = \frac{17}{8}$
$\tan t = \frac{15}{8}$

d. $\sin t = \frac{8}{15}$
$\cos t = \frac{15}{17}$
$\tan t = \frac{8}{17}$

e. $\sin t = \frac{8}{17}$
$\cos t = \frac{15}{17}$
$\tan t = \frac{8}{15}$

ANSWER: e
POINTS: 1
REFERENCES: 4.2.5
QUESTION TYPE: Multi-Mode (Multiple choice)

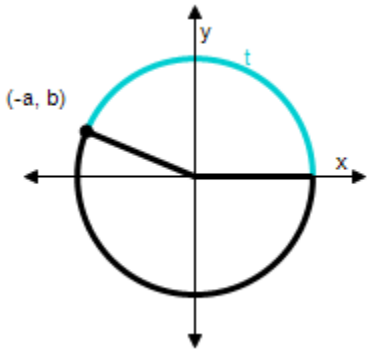
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Section 1.2 - Trigonometrinc Functions: The Unit Circles

HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:22 PM
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2. Find the exact values of the three trigonometric functions sine, cosine, tangent of the real number *t*.



$a = \frac{12}{13}, b = \frac{5}{13}$

a. $\sin t = -\frac{5}{13}$

$\cos t = -\frac{12}{13}$

$\tan t = -\frac{5}{12}$

b. $\sin t = \frac{5}{13}$

$\cos t = \frac{12}{13}$

$\tan t = \frac{5}{12}$

c. $\sin t = \frac{5}{13}$

$\cos t = -\frac{12}{13}$

$\tan t = -\frac{5}{12}$

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d. $\sin t = \frac{5}{12}$

$\cos t = \frac{5}{13}$

$\tan t = \frac{12}{13}$

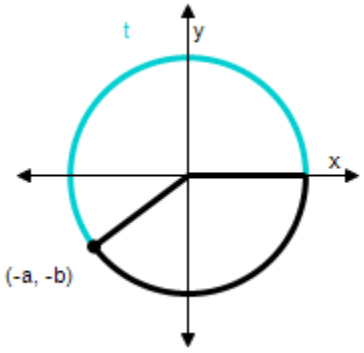
e. $\sin t = \frac{5}{13}$

$\cos t = -\frac{12}{13}$

$\tan t = \frac{5}{12}$

ANSWER: c
POINTS: 1
REFERENCES: 4.2.6
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 11/18/2014 5:52 AM
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3. Find the exact values of the three trigonometric functions sine, cosine, tangent of the real number *t*.



$a = \frac{4}{5}, b = \frac{3}{5}$

a. $\sin t = -\frac{3}{5}$

$\cos t = -\frac{4}{5}$

$\tan t = -\frac{3}{4}$

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b. $\sin t = \frac{3}{5}$

$\cos t = -\frac{3}{4}$

$\tan t = \frac{4}{5}$

c. $\sin t = -\frac{3}{5}$

$\cos t = -\frac{3}{4}$

$\tan t = \frac{4}{5}$

d. $\sin t = \frac{3}{4}$

$\cos t = \frac{3}{5}$

$\tan t = \frac{4}{5}$

e. $\sin t = -\frac{3}{5}$

$\cos t = -\frac{4}{5}$

$\tan t = \frac{3}{4}$

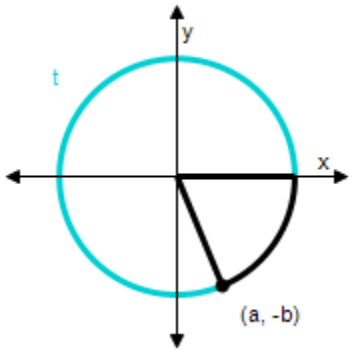
ANSWER:	e
POINTS:	1
REFERENCES:	4.2.7
QUESTION TYPE:	Multi-Mode (Multiple choice)
HAS VARIABLES:	True
STUDENT ENTRY MODE:	Basic
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4. Find the exact values of the three trigonometric functions sine, cosine, tangent of the real number *t*.

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Section 1.2 - Trigonometrinc Functions: The Unit Circles



$a = \frac{5}{13}, b = \frac{12}{13}$

a. $\sin t = -\frac{12}{13}$

$\cos t = \frac{5}{13}$

$\tan t = \frac{12}{5}$

b. $\sin t = \frac{13}{5}$

$\cos t = \frac{13}{12}$

$\tan t = \frac{5}{12}$

c. $\sin t = \frac{12}{13}$

$\cos t = \frac{12}{5}$

$\tan t = \frac{5}{13}$

d. $\sin t = \frac{12}{5}$

$\cos t = \frac{5}{13}$

$\tan t = \frac{12}{13}$

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e. $\sin t = -\frac{12}{13}$

$\cos t = \frac{5}{13}$

$\tan t = -\frac{12}{5}$

ANSWER: e
POINTS: 1
REFERENCES: 4.2.8
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 11/18/2014 11:22 PM
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5. Find the point (x, y) on the unit circle that corresponds to the real number t. (Round your answer to one decimal place.)

$t = \frac{\pi}{2}$

a. $t = \frac{\pi}{2}$ corresponds to the point $(0.0, -1.0)$.
b. $t = \frac{\pi}{2}$ corresponds to the point $(-0.0, -1.0)$.
c. $t = \frac{\pi}{2}$ corresponds to the point $(0.0, 1.0)$.
d. $t = \frac{\pi}{2}$ corresponds to the point $(1.0, -0.0)$.
e. $t = \frac{\pi}{2}$ corresponds to the point $(1.0, 0.0)$.

ANSWER: c
POINTS: 1
REFERENCES: 4.2.9
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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6. Find the point (x, y) on the unit circle that corresponds to the real number t.

$t = 3\pi$

a. $t = 3\pi$ corresponds to the point $(-1, 0)$.
b. $t = 3\pi$ corresponds to the point $(0, -1)$.

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c. $t = 3\pi$ corresponds to the point $(0, 3)$.

d. $t = 3\pi$ corresponds to the point $(3, 0)$.

e. $t = 3\pi$ corresponds to the point $(-1, -1)$.

ANSWER: a
POINTS: 1
REFERENCES: 4.2.10
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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7. Find the point (x, y) on the unit circle that corresponds to the real number t.

$$t = \frac{19\pi}{3}$$

a. $t = \frac{19\pi}{3}$ corresponds to the point $\left(\frac{\sqrt{3}}{2}, \frac{1}{2}\right)$.

b. $t = \frac{19\pi}{3}$ corresponds to the point $\left(\frac{\sqrt{3}}{2}, -\frac{1}{2}\right)$.

c. $t = \frac{19\pi}{3}$ corresponds to the point $\left(\frac{1}{2}, -\frac{\sqrt{3}}{2}\right)$.

d. $t = \frac{19\pi}{3}$ corresponds to the point $\left(\frac{1}{2}, \frac{\sqrt{3}}{2}\right)$.

e. $t = \frac{19\pi}{3}$ corresponds to the point $\left(-\frac{\sqrt{3}}{2}, -\frac{1}{2}\right)$.

ANSWER: d
POINTS: 1
REFERENCES: 4.2.12
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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8. Find the point (x, y) on the unit circle that corresponds to the real number t.

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Section 1.2 - Trigonometrinc Functions: The Unit Circles

$t = \frac{5\pi}{6}$

a. $t = \frac{5\pi}{6}$ corresponds to the point $\left(\frac{1}{2}, -\frac{\sqrt{3}}{2}\right)$.

b. $t = \frac{5\pi}{6}$ corresponds to the point $\left(-\frac{\sqrt{3}}{2}, \frac{1}{2}\right)$.

c. $t = \frac{5\pi}{6}$ corresponds to the point $\left(-\frac{\sqrt{3}}{2}, -\frac{1}{2}\right)$.

d. $t = \frac{5\pi}{6}$ corresponds to the point $\left(\frac{\sqrt{3}}{2}, -\frac{1}{2}\right)$.

e. $t = \frac{5\pi}{6}$ corresponds to the point $\left(\frac{\sqrt{3}}{2}, \frac{1}{2}\right)$.

ANSWER:	b
POINTS:	1
REFERENCES:	4.2.13
QUESTION TYPE:	Multi-Mode (Multiple choice)
HAS VARIABLES:	True
STUDENT ENTRY MODE:	Basic
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9. Find the point (x, y) on the unit circle that corresponds to the real number t.

$t = \frac{10\pi}{3}$

a. $t = \frac{10\pi}{3}$ corresponds to the point $\left(-\frac{\sqrt{3}}{2}, \frac{1}{2}\right)$.

b. $t = \frac{10\pi}{3}$ corresponds to the point $\left(\frac{1}{2}, -\frac{\sqrt{3}}{2}\right)$.

c. $t = \frac{10\pi}{3}$ corresponds to the point $\left(-\frac{\sqrt{3}}{2}, -\frac{1}{2}\right)$.

d. $t = \frac{10\pi}{3}$ corresponds to the point $\left(-\frac{1}{2}, -\frac{\sqrt{3}}{2}\right)$.

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e. $t = \frac{10\pi}{3}$ corresponds to the point $\left(-\frac{1}{2}, \frac{\sqrt{3}}{2}\right)$.

ANSWER: d
POINTS: 1
REFERENCES: 4.2.15
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:22 PM
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10. Evaluate (if possible) the sine, cosine, and tangent of the real number.

$t = \frac{25\pi}{4}$

a. $t = \frac{25\pi}{4}$ corresponds to the point $(x, y) = \left(\frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2}\right)$.

$\sin\left(\frac{25\pi}{4}\right) = -\frac{\sqrt{2}}{2}$
$\cos\left(\frac{25\pi}{4}\right) = \frac{\sqrt{2}}{2}$
$\tan\left(\frac{25\pi}{4}\right) = -1$

b. $t = \frac{25\pi}{4}$ corresponds to the point $(x, y) = \left(\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2}\right)$.

$\sin\left(\frac{25\pi}{4}\right) = \frac{\sqrt{2}}{2}$
$\cos\left(\frac{25\pi}{4}\right) = \frac{\sqrt{2}}{2}$
$\tan\left(\frac{25\pi}{4}\right) = 1$

c. $t = \frac{25\pi}{4}$ corresponds to the point $(x, y) = \left(-\frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2}\right)$.

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$\sin\left(\frac{25\pi}{4}\right) = -\frac{\sqrt{2}}{2}$

$\cos\left(\frac{25\pi}{4}\right) = -\frac{\sqrt{2}}{2}$

$\tan\left(\frac{25\pi}{4}\right) = 1$

d. $t = \frac{25\pi}{4}$ corresponds to the point $(x, y) = \left(-\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2}\right)$.

$\sin\left(\frac{25\pi}{4}\right) = \frac{\sqrt{2}}{2}$

$\cos\left(\frac{25\pi}{4}\right) = -\frac{\sqrt{2}}{2}$

$\tan\left(\frac{25\pi}{4}\right) = -1$

e. Not possible

ANSWER: b
POINTS: 1
REFERENCES: 4.2.17
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:22 PM
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11. Evaluate (if possible) the sine, cosine, and tangent of the real number.

$t = -\frac{\pi}{2}$

a. $t = -\frac{\pi}{2}$ corresponds to the point $(x, y) = (0, 0)$.

$\sin\left(-\frac{\pi}{2}\right) = 0$

$\cos\left(-\frac{\pi}{2}\right) = 0$

$\tan\left(-\frac{\pi}{2}\right) = 0$

b. $t = -\frac{\pi}{2}$ corresponds to the point $(x, y) = (-1, 0)$.

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$\sin\left(-\frac{\pi}{2}\right) = -1$

$\cos\left(-\frac{\pi}{2}\right) = 0$

$\tan\left(-\frac{\pi}{2}\right) = 0$

c. $t = -\frac{\pi}{2}$ corresponds to the point $(x, y) = (0, -1)$.

$\sin\left(-\frac{\pi}{2}\right) = -1$

$\cos\left(-\frac{\pi}{2}\right) = 0$

$\tan\left(-\frac{\pi}{2}\right)$ is undefined

d. $t = -\frac{\pi}{2}$ corresponds to the point $(x, y) = (-1, 0)$.

$\sin\left(-\frac{\pi}{2}\right) = 0$

$\cos\left(-\frac{\pi}{2}\right) = -1$

$\tan\left(-\frac{\pi}{2}\right) = 0$

e. Not possible

ANSWER: c
POINTS: 1
REFERENCES: 4.2.25
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:22 PM
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12. Evaluate (if possible) the sine, cosine, and tangent of the real number.

$t = -7\pi$

a. $t = -7\pi$ corresponds to the point $(x, y) = (0, -1)$.

$\sin(-7\pi) = -1$

$\cos(-7\pi) = 0$

$\tan(-7\pi)$ is undefined.

b. $t = -7\pi$ corresponds to the point $(x, y) = (-1, 0)$.

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$\sin(-7\pi) = -1$
$\cos(-7\pi) = 0$
$\tan(-7\pi)$ is undefined.

c. $t = -7\pi$ corresponds to the point $(x, y) = (0, -1)$.
$\sin(-7\pi) = 0$
$\cos(-7\pi) = 0$
$\tan(-7\pi)$ is undefined.

d. $t = -7\pi$ corresponds to the point $(x, y) = (-1, 0)$.
$\sin(-7\pi) = 0$
$\cos(-7\pi) = -1$
$\tan(-7\pi) = 0$

e. Not possible

ANSWER: d
POINTS: 1
REFERENCES: 4.2.26
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:22 PM
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13. Evaluate (if possible) the sine, cosine, and tangent of the real number.

$$t = \frac{25\pi}{3}$$

a. $t = \frac{25\pi}{3}$ corresponds to the point $(x, y) = \left(\frac{1}{2}, \frac{\sqrt{3}}{2}\right)$.

$$\sin\left(\frac{25\pi}{3}\right) = -\frac{1}{2}$$
$$\cos\left(\frac{25\pi}{3}\right) = \frac{\sqrt{3}}{2}$$
$$\tan\left(\frac{25\pi}{3}\right) = -\sqrt{3}$$

b. $t = \frac{25\pi}{3}$ corresponds to the point $(x, y) = \left(\frac{1}{2}, \frac{\sqrt{3}}{2}\right)$.

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$\sin\left(\frac{25\pi}{3}\right) = \frac{\sqrt{3}}{2}$

$\cos\left(\frac{25\pi}{3}\right) = \frac{1}{2}$

$\tan\left(\frac{25\pi}{3}\right) = \sqrt{3}$

c. $t = \frac{25\pi}{3}$ corresponds to the point $(x, y) = \left(-\frac{1}{2}, -\frac{\sqrt{3}}{2}\right)$.

$\sin\left(\frac{25\pi}{3}\right) = -\frac{1}{2}$

$\cos\left(\frac{25\pi}{3}\right) = -\frac{\sqrt{3}}{2}$

$\tan\left(\frac{25\pi}{3}\right) = \frac{\sqrt{3}}{3}$

d. $t = \frac{25\pi}{3}$ corresponds to the point $(x, y) = \left(\frac{1}{2}, -\frac{\sqrt{3}}{2}\right)$.

$\sin\left(\frac{25\pi}{3}\right) = -\frac{1}{2}$

$\cos\left(\frac{25\pi}{3}\right) = \frac{\sqrt{3}}{2}$

$\tan\left(\frac{25\pi}{3}\right) = -\frac{\sqrt{3}}{3}$

e. Not possible

ANSWER: b
POINTS: 1
REFERENCES: 4.2.27
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:22 PM
DATE MODIFIED: 11/19/2014 12:58 AM

14. Evaluate (if possible) the sine, cosine, and tangent of the real number.

$t = \frac{3\pi}{2}$

a. $t = \frac{3\pi}{2}$ corresponds to the point $(x, y) = (-1, 0)$.

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$\sin\left(\frac{3\pi}{2}\right) = 0$

$\cos\left(\frac{3\pi}{2}\right) = -1$

$\tan\left(\frac{3\pi}{2}\right) = 0$

b. $t = \frac{3\pi}{2}$ corresponds to the point $(x, y) = (0, -1)$.

$\sin\left(\frac{3\pi}{2}\right) = -1$

$\cos\left(\frac{3\pi}{2}\right) = 0$

$\tan\left(\frac{3\pi}{2}\right)$ is undefined.

c. $t = \frac{3\pi}{2}$ corresponds to the point $(x, y) = (0, 0)$.

$\sin\left(\frac{3\pi}{2}\right) = 0$

$\cos\left(\frac{3\pi}{2}\right) = 0$

$\tan\left(\frac{3\pi}{2}\right) = 0$

d. $t = \frac{3\pi}{2}$ corresponds to the point $(x, y) = (-1, 0)$.

$\sin\left(\frac{3\pi}{2}\right) = -1$

$\cos\left(\frac{3\pi}{2}\right) = 0$

$\tan\left(\frac{3\pi}{2}\right) = 0$

e. Not possible

ANSWER: b
POINTS: 1
REFERENCES: 4.2.32
QUESTION TYPE: Multi-Mode (Multiple choice)
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Section 1.2 - Trigonometrinc Functions: The Unit Circles

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15. Evaluate (if possible) the sine, cosine, and tangent of the real number.

$t = -\frac{3\pi}{2}$

a. $t = -\frac{3\pi}{2}$ corresponds to the point $(x, y) = (0, 0)$.

$\sin\left(-\frac{3\pi}{2}\right) = 0$

$\cos\left(-\frac{3\pi}{2}\right) = 0$

$\tan\left(-\frac{3\pi}{2}\right) = 0$

b. $t = -\frac{3\pi}{2}$ corresponds to the point $(x, y) = (1, 0)$.

$\sin\left(-\frac{3\pi}{2}\right) = 1$

$\cos\left(-\frac{3\pi}{2}\right) = 0$

$\tan\left(-\frac{3\pi}{2}\right) = 0$

c. $t = -\frac{3\pi}{2}$ corresponds to the point $(x, y) = (0, 1)$.

$\sin\left(-\frac{3\pi}{2}\right) = 1$

$\cos\left(-\frac{3\pi}{2}\right) = 0$

$\tan\left(-\frac{3\pi}{2}\right)$ is undefined.

d. $t = -\frac{3\pi}{2}$ corresponds to the point $(x, y) = (1, 0)$.

$\sin\left(-\frac{3\pi}{2}\right) = 0$

$\cos\left(-\frac{3\pi}{2}\right) = 1$

$\tan\left(-\frac{3\pi}{2}\right) = 0$

e. Not possible

ANSWER: c

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Section 1.2 - Trigonometrinc Functions: The Unit Circles

POINTS: 1
REFERENCES: 4.2.33
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STUDENT ENTRY MODE: Basic
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16. Evaluate (if possible) the sine, cosec, and tangent of the real number.

$t = -8\pi$

a. $t = -8\pi$ corresponds to the point $(x, y) = (1, 0)$.
$\sin(-8\pi) = 0$
$\csc(-8\pi)$ is undefined
$\tan(-8\pi) = 0$

b. $t = -8\pi$ corresponds to the point $(x, y) = (0, 1)$.
$\sin(-8\pi) = 0$
$\csc(-8\pi) = 0$
$\tan(-8\pi)$ is undefined

c. $t = -8\pi$ corresponds to the point $(x, y) = (1, 0)$.
$\sin(-8\pi) = 1$
$\csc(-8\pi) = 0$
$\tan(-8\pi)$ is undefined

d. $t = -8\pi$ corresponds to the point $(x, y) = (0, 1)$.
$\sin(-8\pi) = 1$
$\csc(-8\pi) = 0$
$\tan(-8\pi)$ is undefined

e. Not possible

ANSWER: a
POINTS: 1
REFERENCES: 4.2.34
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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17. Evaluate the trigonometric function using its period as an aid.

$\sin 4\pi$

a. $\sin 4\pi = 4$

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b. $\sin 4\pi = -1$

c. $\sin 4\pi = -4$

d. $\sin 4\pi = 0$

e. $\sin 4\pi = \infty$

ANSWER: d
POINTS: 1
REFERENCES: 4.2.35
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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18. Evaluate the trigonometric function using its period as an aid.

$\cos 8\pi$

a. $\cos 8\pi = -8$

b. $\cos 8\pi = 0$

c. $\cos 8\pi = 8$

d. $\cos 8\pi = \infty$

e. $\cos 8\pi = 1$

ANSWER: e
POINTS: 1
REFERENCES: 4.2.36
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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19. Evaluate the trigonometric function using its period as an aid.

$$\cos\frac{5\pi}{3}$$

a. $\cos\frac{5\pi}{3} = \infty$

b. $\cos\frac{5\pi}{3} = -\frac{1}{2}$

c. $\cos\frac{5\pi}{3} = 2$

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d. $\cos\frac{5\pi}{3} = -2$

e. $\cos\frac{5\pi}{3} = \frac{1}{2}$

ANSWER: e
POINTS: 1
REFERENCES: 4.2.37
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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20. Evaluate the trigonometric function using its period as an aid.

$\sin\frac{3\pi}{4}$

a. $\sin\frac{3\pi}{4} = \infty$

b. $\sin\frac{3\pi}{4} = -\sqrt{2}$

c. $\sin\frac{3\pi}{4} = -\frac{\sqrt{2}}{2}$

d. $\sin\frac{3\pi}{4} = \sqrt{2}$

e. $\sin\frac{3\pi}{4} = \frac{\sqrt{2}}{2}$

ANSWER: e
POINTS: 1
REFERENCES: 4.2.38
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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21. Evaluate the trigonometric function using its period as an aid.

$\cos\frac{23\pi}{4}$

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a. $\cos\frac{23\pi}{4} = -\frac{\sqrt{2}}{2}$

b. $\cos\frac{23\pi}{4} = -\sqrt{2}$

c. $\cos\frac{23\pi}{4} = \sqrt{2}$

d. $\cos\frac{23\pi}{4} = \frac{\sqrt{2}}{2}$

e. $\cos\frac{23\pi}{4} = \infty$

ANSWER: d
POINTS: 1
REFERENCES: 4.2.39
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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22. Evaluate the trigonometric function using its period as an aid.

$\sin\left(\frac{11\pi}{6}\right)$

a. $\sin\left(\frac{11\pi}{6}\right) = -\frac{1}{2}$

b. $\sin\left(\frac{11\pi}{6}\right) = \frac{\sqrt{2}}{2}$

c. $\sin\left(\frac{11\pi}{6}\right) = \infty$

d. $\sin\left(\frac{11\pi}{6}\right) = \frac{1}{2}$

e. $\sin\left(\frac{11\pi}{6}\right) = -\frac{\sqrt{2}}{2}$

ANSWER: a
POINTS: 1
REFERENCES: 4.2.40
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True

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Section 1.2 - Trigonometrinc Functions: The Unit Circles

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23. Use the value of the trigonometric function to find the $\sin(-t)$.

$\sin t = \frac{1}{6}$

a. $\sin(-t) = -\frac{1}{6}$
b. $\sin(-t) = -6$
c. $\sin(-t) = 6$
d. $\sin(-t) = \infty$
e. $\sin(-t) = \frac{1}{6}$

ANSWER: a
POINTS: 1
REFERENCES: 4.2.43a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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24. Use the value of the trigonometric function to find $\csc(-t)$.

$\sin t = \frac{1}{6}$

a. $\csc(-t) = \frac{1}{6}$
b. $\csc(-t) = 6$
c. $\csc(-t) = -\frac{1}{6}$
d. $\csc(-t) = -6$
e. $\csc(-t) = \infty$

ANSWER: d
POINTS: 1
REFERENCES: 4.2.43b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic

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25. Use the value of the trigonometric function to find $\sin t$.

$$\sin(-t) = \frac{3}{10}$$

a. $\sin t = \frac{10}{3}$

b. $\sin t = \frac{3}{10}$

c. $\sin t = \infty$

d. $\sin t = -\frac{3}{10}$

e. $\sin t = -\frac{10}{3}$

ANSWER: d
POINTS: 1
REFERENCES: 4.2.44a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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26. Use the value of the trigonometric function to find $\csc t$.

$$\sin(-t) = \frac{3}{4}$$

a. $\csc t = \frac{3}{4}$

b. $\csc t = -\frac{3}{4}$

c. $\csc t = \infty$

d. $\csc t = \frac{4}{3}$

e. $\csc t = -\frac{4}{3}$

ANSWER: e
POINTS: 1
REFERENCES: 4.2.44b

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27. Use the value of the trigonometric function to find $\cos t$.

$\cos(-t) = -\frac{1}{4}$

a. $\cos t = \frac{1}{4}$
b. $\cos t = -4$
c. $\cos t = \infty$
d. $\cos t = 4$
e. $\cos t = -\frac{1}{4}$

ANSWER: e
POINTS: 1
REFERENCES: 4.2.45a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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28. Use the value of the trigonometric function to find $\sec(-t)$.

$\cos(-t) = -\frac{1}{6}$

a. $\sec(-t) = \infty$
b. $\sec(-t) = -\frac{1}{6}$
c. $\sec(-t) = -6$
d. $\sec(-t) = \frac{1}{6}$
e. $\sec(-t) = 6$

ANSWER: c
POINTS: 1
REFERENCES: 4.2.45b
QUESTION TYPE: Multi-Mode (Multiple choice)

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29. Use the value of the trigonometric function to find $\cos(-t)$.

$$\cos t = -\frac{3}{8}$$

a. $\cos(-t) = \frac{8}{3}$

b. $\cos(-t) = \frac{3}{8}$

c. $\cos(-t) = -\frac{3}{8}$

d. $\cos(-t) = -\frac{8}{3}$

e. $\cos(-t) = \infty$

ANSWER: c
POINTS: 1
REFERENCES: 4.2.46a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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30. Use the value of the trigonometric function to find $\sec(-t)$.

$$\cos t = -\frac{3}{4}$$

a. $\sec(-t) = \frac{4}{3}$

b. $\sec(-t) = -\frac{3}{4}$

c. $\sec(-t) = -\frac{4}{3}$

d. $\sec(-t) = \infty$

e. $\sec(-t) = \frac{3}{4}$

ANSWER: c

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POINTS: 1
REFERENCES: 4.2.46b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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31. Use the value of the trigonometric function to find $\sin(\pi - t)$.

$\sin t = \frac{6}{7}$

a. $\sin(\pi - t) = \frac{6}{7}$

b. $\sin(\pi - t) = -\frac{6}{7}$

c. $\sin(\pi - t) = -\frac{7}{6}$

d. $\sin(\pi - t) = \infty$

e. $\sin(\pi - t) = \frac{7}{6}$

ANSWER: a
POINTS: 1
REFERENCES: 4.2.47a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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32. Use the value of the trigonometric function to find $\sin(t + \pi)$.

$\sin t = \frac{7}{8}$

a. $\sin(t + \pi) = -\frac{8}{7}$

b. $\sin(t + \pi) = \frac{8}{7}$

c. $\sin(t + \pi) = \frac{7}{8}$

d. $\sin(t + \pi) = \infty$

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e. $\sin(t+\pi) = -\frac{7}{8}$

ANSWER: e
POINTS: 1
REFERENCES: 4.2.47b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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33. Use the value of the trigonometric function to find $\cos(\pi - t)$.

$\cos t = \frac{5}{6}$

a. $\cos(\pi - t) = \frac{5}{6}$

b. $\cos(\pi - t) = -\frac{5}{6}$

c. $\cos(\pi - t) = \frac{6}{5}$

d. $\cos(\pi - t) = \infty$

e. $\cos(\pi - t) = -\frac{6}{5}$

ANSWER: b
POINTS: 1
REFERENCES: 4.2.48a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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34. Use the value of the trigonometric function to find $\cos(t+\pi)$.

$\cos t = \frac{7}{8}$

a. $\cos(t+\pi) = \frac{7}{8}$

b. $\cos(t+\pi) = -\frac{8}{7}$

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c. $\cos(t+\pi) = \infty$

d. $\cos(t+\pi) = \frac{8}{7}$

e. $\cos(t+\pi) = -\frac{7}{8}$

ANSWER: e
POINTS: 1
REFERENCES: 4.2.48b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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35. Find the value of given trigonometric function. Round your answer to four decimal places.

$\sin\frac{\pi}{6}$

a. $\sin\frac{\pi}{6} \approx -0.5000$

b. $\sin\frac{\pi}{6} \approx 0.6000$

c. $\sin\frac{\pi}{6} \approx 0.4000$

d. $\sin\frac{\pi}{6} \approx 0.7000$

e. $\sin\frac{\pi}{6} \approx 0.5000$

ANSWER: e
POINTS: 1
REFERENCES: 4.2.49
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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36. Find the value of given trigonometric function. Round your answer to four decimal places.

$\tan\frac{\pi}{8}$

a. $\tan\frac{\pi}{8} \approx 0.3142$

b. $\tan\frac{\pi}{8} \approx 0.6142$

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c. $\tan\frac{\pi}{8} \approx -0.4142$

d. $\tan\frac{\pi}{8} \approx 0.4142$

e. $\tan\frac{\pi}{8} \approx 0.5142$

ANSWER: d
POINTS: 1
REFERENCES: 4.2.50
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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37. Find the value of given trigonometric function. Round your answer to four decimal places.

$\cot\frac{\pi}{7}$

a. $\cot\frac{\pi}{7} \approx 2.0765$

b. $\cot\frac{\pi}{7} \approx 1.9765$

c. $\cot\frac{\pi}{7} \approx 2.2765$

d. $\cot\frac{\pi}{7} \approx -2.0765$

e. $\cot\frac{\pi}{7} \approx 2.1765$

ANSWER: a
POINTS: 1
REFERENCES: 4.2.51
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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38. Find the value of given trigonometric function. Round your answer to four decimal places..

$\csc\frac{2\pi}{3}$

a. $\csc\frac{2\pi}{3} \approx 1.1547$

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b. $\csc\frac{2\pi}{3} \approx 1.2547$

c. $\csc\frac{2\pi}{3} \approx -1.1547$

d. $\csc\frac{2\pi}{3} \approx 1.0547$

e. $\csc\frac{2\pi}{3} \approx 1.3547$

ANSWER: a
POINTS: 1
REFERENCES: 4.2.52
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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39. Find the value of given trigonometric function. Round your answer to four decimal places.

$\cos(-1.6)$

a. $\cos(-1.6) \approx 0.1708$
b. $\cos(-1.6) \approx 0.0708$
c. $\cos(-1.6) \approx 0.0292$
d. $\cos(-1.6) \approx -0.0292$
e. $\cos(-1.6) \approx -0.1292$

ANSWER: d
POINTS: 1
REFERENCES: 4.2.53
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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40. Find the value of given trigonometric function. Round your answer to four decimal places.

$\cos(-2.5)$

a. $\cos(-2.5) \approx -0.7011$
b. $\cos(-2.5) \approx 0.8011$
c. $\cos(-2.5) \approx -0.8011$
d. $\cos(-2.5) \approx -0.9011$

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e. $\cos(-2.5) \approx -0.6011$

ANSWER: c
POINTS: 1
REFERENCES: 4.2.54
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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41. Find the value of given trigonometric function. Round your answer to four decimal places.

$\csc 0.5$

a. $\csc 0.5 \approx 2.2858$
b. $\csc 0.5 \approx -2.0858$
c. $\csc 0.5 \approx 2.0858$
d. $\csc 0.5 \approx 1.9858$
e. $\csc 0.5 \approx 2.1858$

ANSWER: c
POINTS: 1
REFERENCES: 4.2.55
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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42. Find the value of given trigonometric function. Round your answer to four decimal places.

$\sec 1.6$

a. $\sec 1.6 \approx -34.1471$
b. $\sec 1.6 \approx -34.0471$
c. $\sec 1.6 \approx -34.2471$
d. $\sec 1.6 \approx -34.3471$
e. $\sec 1.6 \approx 34.2471$

ANSWER: c
POINTS: 1
REFERENCES: 4.2.56
QUESTION TYPE: Multi-Mode (Multiple choice)
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43. Find the value of given trigonometric function. Round your answer to four decimal places.

$\sec(-22.3)$

a. $\sec(-22.3) \approx -0.8497$
b. $\sec(-22.3) \approx 1.0497$
c. $\sec(-22.3) \approx -0.9497$
d. $\sec(-22.3) \approx -1.1497$
e. $\sec(-22.3) \approx -1.0497$

ANSWER: e
POINTS: 1
REFERENCES: 4.2.57
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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44. Find the value of given trigonometric function. Round your answer to four decimal places.

$\cot(-0.9)$

a. $\cot(-0.9) \approx -0.6936$
b. $\cot(-0.9) \approx -0.7936$
c. $\cot(-0.9) \approx -0.5936$
d. $\cot(-0.9) \approx -0.8936$
e. $\cot(-0.9) \approx 0.7936$

ANSWER: b
POINTS: 1
REFERENCES: 4.2.58
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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45. The displacement from equilibrium of an oscillating weight suspended by a spring is given by $y(t) = \frac{1}{4}\cos(6t)$, where y is the displacement (in feet) and t is the time (in seconds). Find the displacements when $t = 5$. (Round your answers to two decimal places.)

a. $y(5) \approx 0.04$ foot

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b. $y(5) \approx 0.14$ foot

c. $y(5) \approx 0.44$ foot

d. $y(5) \approx 0.34$ foot

e. $y(5) \approx 0.24$ foot

ANSWER: a
POINTS: 1
REFERENCES: 4.2.59a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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46. The displacement from equilibrium of an oscillating weight suspended by a spring is given by $y(t) = \frac{1}{4}\cos 6t$, where y is the displacement (in feet) and t is the time (in seconds). Find the displacements when $t = \frac{1}{2}$.

a. $y\left(\frac{1}{2}\right) \approx -0.15$ foot

b. $y\left(\frac{1}{2}\right) \approx 0.15$ foot

c. $y\left(\frac{1}{2}\right) \approx -0.05$ foot

d. $y\left(\frac{1}{2}\right) \approx 0.05$ foot

e. $y\left(\frac{1}{2}\right) \approx -0.25$ foot

ANSWER: e
POINTS: 1
REFERENCES: 4.2.59b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:22 PM
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47. The displacement from equilibrium of an oscillating weight suspended by a spring and subject to the

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damping effect of friction is given by $y(t) = \frac{1}{4}e^{-t}\cos 6t$, where y is the displacement (in feet) and t is the time (in seconds). Complete the following table.(Round your answer to four decimal places.)

t	1	$\frac{1}{8}$	$\frac{1}{5}$	$\frac{3}{7}$	5
y					

a.

t	1	$\frac{1}{8}$	$\frac{1}{5}$	$\frac{3}{7}$	5
y	0.0883	0.1614	0.2742	−0.1371	0.0003

b.

t	1	$\frac{1}{8}$	$\frac{1}{5}$	$\frac{3}{7}$	5
y	0.0883	0.1614	0.0742	−0.1371	0.0003

c.

t	1	$\frac{1}{8}$	$\frac{1}{5}$	$\frac{3}{7}$	5
y	0.1883	0.1614	0.0742	−0.1371	0.0883

d.

t	1	$\frac{1}{8}$	$\frac{1}{5}$	$\frac{3}{7}$	5
y	0.1883	0.3614	0.0742	−0.1371	0.0883

e.

t	1	$\frac{1}{8}$	$\frac{1}{5}$	$\frac{3}{7}$	5
y	0.0883	0.1614	0.0742	0.0629	0.2003

ANSWER: b
POINTS: 1
REFERENCES: 4.2.60b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:22 PM
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48. Find the point (x, y) on the unit circle that corresponds to the real number $t = \frac{5\pi}{4}$. Use your results to evaluate $\tan t$.

a. $\tan t = \frac{\sqrt{2}}{2}$

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b. $\tan t = 0$

c. $\tan t = -\frac{\sqrt{2}}{2}$

d. $\tan t = 1$

e. $\tan t = \text{undefined}$

ANSWER: d
POINTS: 1
REFERENCES: 4.2.11
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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49. Find the point (x, y) on the unit circle that corresponds to the real number $\frac{5\pi}{6}$. Use your results to evaluate $\cos t$.

a. $\cos t = \frac{\sqrt{3}}{2}$

b. $\cos t = -\frac{\sqrt{3}}{2}$

c. $\cos t = -\frac{1}{2}$

d. $\cos t = -1$

e. $\cos t = 1$

ANSWER: b
POINTS: 1
REFERENCES: 4.2.13
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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50. The displacement from equilibrium of an oscillating weight suspended by a spring is given by $y(t) = 3\cos 10t$, where y is the displacement in centimeters and t is the time in seconds. Find the displacement when $t = 0.65$, rounding answer to four decimal places.

a. –3.7018 cm
b. –6.4350 cm
c. 23.8825 cm

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d. 2.9298 cm

e. –1.6362 cm

ANSWER: d
POINTS: 1
REFERENCES: 4.2.59
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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Section 1.3 - Right Triangle Trigonometry

1. Evaluate each function. Round your answers to four decimal places.

tan21.5° and cot68.5°

a. 0.5939 and 0.5939
b. 0.4439 and 0.4439
c. 0.3939 and 0.3939
d. 0.4939 and 0.4939
e. 0.5439 and 0.5439

ANSWER: c
POINTS: 1
REFERENCES: 6.2.47
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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2. Evaluate each function. Round your answers to four decimal places.

sin22.3° and csc22.3°

a. 0.5795 and 2.8354
b. 0.3795 and 2.6354
c. 0.4795 and 2.7354
d. 0.4295 and 2.6854
e. 0.5295 and 2.7854

ANSWER: b
POINTS: 1
REFERENCES: 6.2.48
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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3. Evaluate each function. Round your answers to four decimal places.

cos22°51' and sin84°18'

a. 0.9715 and 1.0451
b. 1.0215 and 1.0951
c. 1.1215 and 1.1951
d. 1.0715 and 1.1451
e. 0.9215 and 0.9951

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Section 1.3 - Right Triangle Trigonometry

ANSWER: e
POINTS: 1
REFERENCES: 6.2.49
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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4. Evaluate each function. Round your answers to four decimal places.

sec42°13' and csc45°29'

a. 1.5502 and 1.6024
b. 1.4502 and 1.5024
c. 1.4002 and 1.4524
d. 1.3502 and 1.4024
e. 1.5002 and 1.5524

ANSWER: d
POINTS: 1
REFERENCES: 6.2.50
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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5. Evaluate each function. Round your answers to four decimal places.

$\cot\left(\frac{\pi}{13}\right)$ and $\tan\left(\frac{\pi}{13}\right)$

a. 4.0572 and 0.2465
b. 4.1072 and 0.2965
c. 4.2072 and 0.3965
d. 4.1572 and 0.3465
e. 4.2572 and 0.4465

ANSWER: a
POINTS: 1
REFERENCES: 6.2.51
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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Section 1.3 - Right Triangle Trigonometry

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6. Evaluate each function. Round your answers to four decimal places.

sec0.16 and cos0.16

a. 1.0629 and 1.0372
b. 1.2129 and 1.1872
c. 1.0129 and 0.9872
d. 1.1129 and 1.0872
e. 1.1629 and 1.1372

ANSWER: c
POINTS: 1
REFERENCES: 6.2.52
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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7. Evaluate each function. Round your answers to four decimal places.

csc3 and $\tan\frac{1}{5}$

a. 7.0862 and 0.2027
b. 7.1862 and 0.3027
c. 7.2362 and 0.3527
d. 7.1362 and 0.2527
e. 7.2862 and 0.4027

ANSWER: a
POINTS: 1
REFERENCES: 6.2.53
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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8. Evaluate each function. Round your answers to four decimal places.

$\sec\left(\frac{\pi}{2}-4\right)$ and $\cot\left(\frac{\pi}{2}-\frac{1}{4}\right)$

a. –1.2213 and 0.3553

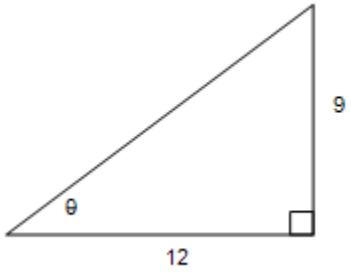
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b. –1.1213 and 0.4553
c. –1.2713 and 0.3053
d. –1.3213 and 0.2553
e. –1.1713 and 0.4053

ANSWER: d
POINTS: 1
REFERENCES: 6.2.54
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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9. Find the exact values of the six trigonometric functions of the angle θ shown in the figure. (Use the Pythagorean Theorem to find the third side of the triangle.)



a. $\sin\theta = \frac{5}{3}$ $\csc\theta = \frac{3}{5}$
$\cos\theta = \frac{5}{4}$ $\sec\theta = \frac{4}{5}$
$\tan\theta = \frac{4}{3}$ $\cot\theta = \frac{3}{4}$

b. $\sin\theta = \frac{4}{3}$ $\csc\theta = \frac{3}{4}$
$\cos\theta = \frac{5}{4}$ $\sec\theta = \frac{4}{5}$
$\tan\theta = \frac{5}{3}$ $\cot\theta = \frac{3}{5}$

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c. $\sin\theta = \frac{4}{5}$ $\csc\theta = \frac{3}{4}$

$\cos\theta = \frac{3}{5}$ $\sec\theta = \frac{4}{3}$

$\tan\theta = \frac{5}{3}$ $\cot\theta = \frac{5}{4}$

d. $\sin\theta = \frac{3}{5}$ $\csc\theta = \frac{5}{3}$

$\cos\theta = \frac{4}{5}$ $\sec\theta = \frac{5}{4}$

$\tan\theta = \frac{3}{4}$ $\cot\theta = \frac{4}{3}$

e. $\sin\theta = \frac{4}{3}$ $\csc\theta = \frac{5}{3}$

$\cos\theta = \frac{5}{4}$ $\sec\theta = \frac{3}{5}$

$\tan\theta = \frac{3}{4}$ $\cot\theta = \frac{4}{5}$

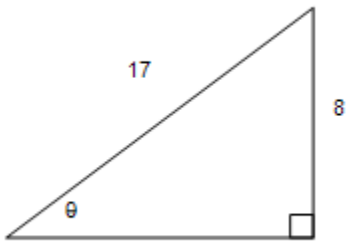
ANSWER: d
POINTS: 1
REFERENCES: 6.2.5
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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10. Find the exact values of the six trigonometric functions of the angle θ shown in the figure. (Use the Pythagorean Theorem to find the third side of the triangle.)

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Section 1.3 - Right Triangle Trigonometry



a.

$\sin\theta = \frac{15}{8}$ $\csc\theta = \frac{8}{15}$

$\cos\theta = \frac{17}{15}$ $\sec\theta = \frac{15}{17}$

$\tan\theta = \frac{17}{8}$ $\cot\theta = \frac{8}{17}$

b.

$\sin\theta = \frac{17}{8}$ $\csc\theta = \frac{8}{17}$

$\cos\theta = \frac{17}{15}$ $\sec\theta = \frac{15}{17}$

$\tan\theta = \frac{15}{8}$ $\cot\theta = \frac{8}{15}$

c.

$\sin\theta = \frac{8}{17}$ $\csc\theta = \frac{17}{8}$

$\cos\theta = \frac{15}{17}$ $\sec\theta = \frac{17}{15}$

$\tan\theta = \frac{8}{15}$ $\cot\theta = \frac{15}{8}$

d.

$\sin\theta = \frac{17}{15}$ $\csc\theta = \frac{17}{8}$

$\cos\theta = \frac{15}{8}$ $\sec\theta = \frac{8}{17}$

$\tan\theta = \frac{8}{15}$ $\cot\theta = \frac{15}{17}$

e.

$\sin\theta = \frac{15}{17}$ $\csc\theta = \frac{8}{15}$

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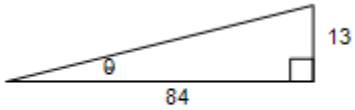
Section 1.3 - Right Triangle Trigonometry

$\cos\theta = \frac{8}{17}$ $\sec\theta = \frac{15}{8}$

$\tan\theta = \frac{17}{8}$ $\cot\theta = \frac{17}{15}$

ANSWER: c
POINTS: 1
REFERENCES: 6.2.6
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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11. Find the exact values of the six trigonometric functions of the angle θ shown in the figure. (Use the Pythagorean Theorem to find the third side of the triangle.)



a.

$\sin\theta = \frac{85}{13}$ $\csc\theta = \frac{13}{85}$

$\cos\theta = \frac{85}{84}$ $\sec\theta = \frac{84}{85}$

$\tan\theta = \frac{84}{13}$ $\cot\theta = \frac{13}{84}$

b.

$\sin\theta = \frac{84}{13}$ $\csc\theta = \frac{13}{84}$

$\cos\theta = \frac{85}{84}$ $\sec\theta = \frac{13}{85}$

$\tan\theta = \frac{85}{13}$ $\cot\theta = \frac{84}{85}$

c.

$\sin\theta = \frac{84}{85}$ $\csc\theta = \frac{13}{84}$

$\cos\theta = \frac{13}{85}$ $\sec\theta = \frac{84}{13}$

$\tan\theta = \frac{85}{13}$ $\cot\theta = \frac{85}{84}$

d.

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$\sin\theta = \frac{85}{84}$ $\csc\theta = \frac{85}{13}$

$\cos\theta = \frac{84}{13}$ $\sec\theta = \frac{13}{85}$

$\tan\theta = \frac{13}{84}$ $\cot\theta = \frac{84}{85}$

e.

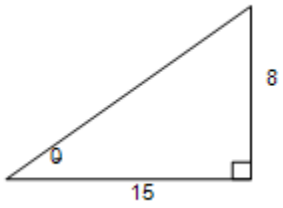
$\sin\theta = \frac{13}{85}$ $\csc\theta = \frac{85}{13}$

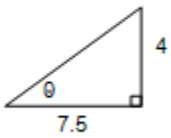
$\cos\theta = \frac{84}{85}$ $\sec\theta = \frac{85}{84}$

$\tan\theta = \frac{13}{84}$ $\cot\theta = \frac{84}{13}$

ANSWER: e
POINTS: 1
REFERENCES: 6.2.7
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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12. Find the exact values of the six trigonometric functions of the angle θ for each of the two triangles.





a. $\sin\theta = \frac{15}{8}$ $\csc\theta = \frac{8}{17}$

$\cos\theta = \frac{17}{15}$ $\sec\theta = \frac{8}{15}$

$\tan\theta = \frac{17}{8}$ $\cot\theta = \frac{15}{17}$

b. $\sin\theta = \frac{17}{15}$ $\csc\theta = \frac{17}{8}$

$\cos\theta = \frac{15}{8}$ $\sec\theta = \frac{8}{17}$

$\tan\theta = \frac{8}{15}$ $\cot\theta = \frac{15}{17}$

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c. $\sin\theta = \frac{8}{17}$ $\csc\theta = \frac{17}{8}$

$\cos\theta = \frac{15}{17}$ $\sec\theta = \frac{17}{15}$

$\tan\theta = \frac{8}{15}$ $\cot\theta = \frac{15}{8}$

d. $\sin\theta = \frac{15}{8}$ $\csc\theta = \frac{8}{15}$

$\cos\theta = \frac{17}{15}$ $\sec\theta = \frac{15}{17}$

$\tan\theta = \frac{17}{8}$ $\cot\theta = \frac{8}{17}$

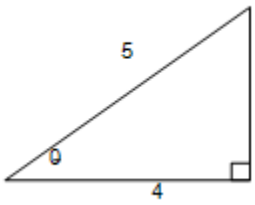
e. $\sin\theta = \frac{15}{17}$ $\csc\theta = \frac{8}{15}$

$\cos\theta = \frac{8}{17}$ $\sec\theta = \frac{15}{8}$

$\tan\theta = \frac{17}{8}$ $\cot\theta = \frac{17}{15}$

ANSWER: c
POINTS: 1
REFERENCES: 6.2.9
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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13. Find the exact values of the six trigonometric functions of the angle θ for the triangle.



a. $\sin\theta = \frac{3}{5}$ $\csc\theta = \frac{5}{3}$

$\cos\theta = \frac{4}{5}$ $\sec\theta = \frac{5}{4}$

$\tan\theta = \frac{3}{4}$ $\cot\theta = \frac{4}{3}$

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b. $\sin\theta = \frac{4}{3}$ $\csc\theta = \frac{3}{4}$

$\cos\theta = \frac{5}{4}$ $\sec\theta = \frac{4}{5}$

$\tan\theta = \frac{5}{3}$ $\cot\theta = \frac{3}{5}$

c. $\sin\theta = \frac{4}{3}$ $\csc\theta = \frac{5}{3}$

$\cos\theta = \frac{5}{4}$ $\sec\theta = \frac{3}{5}$

$\tan\theta = \frac{3}{4}$ $\cot\theta = \frac{4}{5}$

d. $\sin\theta = \frac{4}{5}$ $\csc\theta = \frac{3}{4}$

$\cos\theta = \frac{3}{5}$ $\sec\theta = \frac{4}{3}$

$\tan\theta = \frac{5}{3}$ $\cot\theta = \frac{5}{4}$

e. $\sin\theta = \frac{4}{3}$ $\csc\theta = \frac{3}{5}$

$\cos\theta = \frac{5}{4}$ $\sec\theta = \frac{4}{5}$

$\tan\theta = \frac{5}{3}$ $\cot\theta = \frac{3}{4}$

ANSWER: a
POINTS: 1
REFERENCES: 6.2.10
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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14. Select a right triangle corresponding to the trigonometric function of the acute angle θ. Use the Pythagorean Theorem to determine the third side and then find the other five trigonometric functions of θ.

$\tan\theta = \frac{8}{15}$

$\sin\theta = \frac{8}{17}$ $\csc\theta = \frac{17}{8}$

$\cos\theta = \frac{15}{17}$ $\sec\theta = \frac{17}{15}$

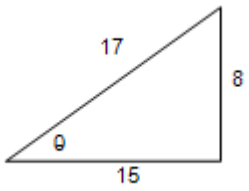
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Section 1.3 - Right Triangle Trigonometry

$\tan\theta = \frac{8}{15}$ $\cot\theta = \frac{15}{8}$

a.

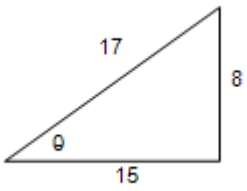


$\sin\theta = \frac{8}{17}$ $\csc\theta = \frac{17}{8}$

$\cos\theta = \frac{15}{17}$ $\sec\theta = \frac{17}{15}$

$\tan\theta = \frac{8}{15}$ $\cot\theta = \frac{15}{8}$

b.

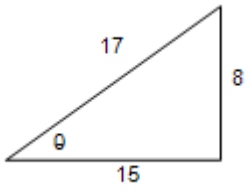


$\sin\theta = \frac{8}{17}$ $\csc\theta = \frac{8}{15}$

$\cos\theta = \frac{15}{17}$ $\sec\theta = \frac{15}{8}$

$\tan\theta = \frac{17}{8}$ $\cot\theta = \frac{17}{15}$

c.

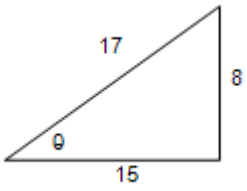


$\sin\theta = \frac{17}{15}$ $\csc\theta = \frac{17}{8}$

$\cos\theta = \frac{15}{8}$ $\sec\theta = \frac{8}{17}$

$\tan\theta = \frac{8}{15}$ $\cot\theta = \frac{15}{17}$

d.

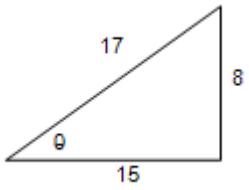


$\sin\theta = \frac{17}{8}$ $\csc\theta = \frac{8}{17}$

$\cos\theta = \frac{17}{15}$ $\sec\theta = \frac{15}{17}$

$\tan\theta = \frac{15}{8}$ $\cot\theta = \frac{8}{15}$

e.



$\sin\theta = \frac{15}{8}$ $\csc\theta = \frac{8}{15}$

$\cos\theta = \frac{17}{15}$ $\sec\theta = \frac{15}{17}$

$\tan\theta = \frac{17}{8}$ $\cot\theta = \frac{8}{17}$

ANSWER: a
POINTS: 1
REFERENCES: 6.2.13
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True

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Section 1.3 - Right Triangle Trigonometry

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15. Construct an appropriate triangle to complete the table. $\left(0° \le \theta \le 90°, 0 \le \theta \le \frac{\pi}{2}\right)$

Function	*θ(deg)*	*θ(rad)*	*Function Value*
sin	45°		

a.

Function	*θ(deg)*	*θ(rad)*	*Function Value*
sin	45°	$\frac{\pi}{4}$	$\frac{\sqrt{2}}{2}$

b.

Function	*θ(deg)*	*θ(rad)*	*Function Value*
sin	45°	$\frac{\pi}{3}$	$\frac{\sqrt{3}}{2}$

c.

Function	*θ(deg)*	*θ(rad)*	*Function Value*
sin	45°	0	0

d.

Function	*θ(deg)*	*θ(rad)*	*Function Value*
sin	45°	$\frac{\pi}{2}$	1

e.

Function	*θ(deg)*	*θ(rad)*	*Function Value*
sin	45°	$\frac{\pi}{6}$	$\frac{1}{2}$

ANSWER: a
POINTS: 1
REFERENCES: 6.2.21
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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16. Construct an appropriate triangle to complete the table. $\left(0° \le \theta \le 90°, 0 \le \theta \le \frac{\pi}{2}\right)$

Function	*θ(deg)*	*θ(rad)*	*Function Value*

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cos	30°		

a.

Function	*θ(deg)*	*θ(rad)*	*Function Value*
cos	30°	$\frac{\pi}{3}$	$\frac{\sqrt{3}}{2}$

b.

Function	*θ(deg)*	*θ(rad)*	*Function Value*
cos	30°	$\frac{\pi}{4}$	$\frac{\sqrt{2}}{2}$

c.

Function	*θ(deg)*	*θ(rad)*	*Function Value*
cos	30°	0	0

d.

Function	*θ(deg)*	*θ(rad)*	*Function Value*
cos	30°	$\frac{\pi}{2}$	1

e.

Function	*θ(deg)*	*θ(rad)*	*Function Value*
cos	30°	$\frac{\pi}{6}$	$\frac{1}{2}$

ANSWER: a
POINTS: 1
REFERENCES: 6.2.22
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 11/20/2014 6:44 AM
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17. Construct an appropriate triangle to complete the table. $\left(0° \le \theta \le 90°, 0 \le \theta \le \frac{\pi}{2}\right)$

Function	*θ(deg)*	*θ(rad)*	*Function Value*
sec		$\frac{\pi}{3}$	

a.

Function	*θ(deg)*	*θ(rad)*	*Function Value*
sec	45°	$\frac{\pi}{3}$	$\sqrt{2}$

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b.

Function	*θ(deg)*	*θ(rad)*	*Function Value*
sec	90°	$\frac{\pi}{3}$	Not defined

c.

Function	*θ(deg)*	*θ(rad)*	*Function Value*
sec	60°	$\frac{\pi}{3}$	2

d.

Function	*θ(deg)*	*θ(rad)*	*Function Value*
sec	0°	$\frac{\pi}{3}$	1

e.

Function	*θ(deg)*	*θ(rad)*	*Function Value*
sec	30°	$\frac{\pi}{3}$	$\frac{2\sqrt{3}}{3}$

ANSWER: c
POINTS: 1
REFERENCES: 6.2.23
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
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18. Construct an appropriate triangle to complete the table. $\left(0° \le \theta \le 90°, 0 \le \theta \le \frac{\pi}{2}\right)$

Function	*θ(deg)*	*θ(rad)*	*Function Value*
tan		$\frac{\pi}{2}$	

a.

Function	*θ(deg)*	*θ(rad)*	*Function Value*
tan	90°	$\frac{\pi}{2}$	Not defined

b.

Function	*θ(deg)*	*θ(rad)*	*Function Value*
tan	45°	$\frac{\pi}{2}$	1

c.

Function	*θ(deg)*	*θ(rad)*	*Function Value*
tan	60°	$\frac{\pi}{2}$	$\sqrt{3}$

d.

Function	*θ(deg)*	*θ(rad)*	*Function Value*
tan	0°	$\frac{\pi}{2}$	0

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e.

Function	*θ(deg)*	*θ(rad)*	*Function Value*
tan	30°	$\frac{\pi}{2}$	$\frac{\sqrt{3}}{3}$

ANSWER: a
POINTS: 1
REFERENCES: 6.2.23
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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19. Construct an appropriate triangle to complete the table. $\left(0° \le \theta \le 90°, 0 \le \theta \le \frac{\pi}{2}\right)$

Function	*θ(deg)*	*θ(rad)*	*Function Value*
cot		$\frac{\pi}{2}$	

a.

Function	*θ(deg)*	*θ(rad)*	*Function Value*
cot	30°	$\frac{\pi}{2}$	$\sqrt{3}$

b.

Function	*θ(deg)*	*θ(rad)*	*Function Value*
cot	45°	$\frac{\pi}{2}$	1

c.

Function	*θ(deg)*	*θ(rad)*	*Function Value*
cot	90°	$\frac{\pi}{2}$	0

d.

Function	*θ(deg)*	*θ(rad)*	*Function Value*
cot	0°	$\frac{\pi}{2}$	Not defined

e.

Function	*θ(deg)*	*θ(rad)*	*Function Value*
cot	60°	$\frac{\pi}{2}$	$\frac{\sqrt{3}}{3}$

ANSWER: c
POINTS: 1
REFERENCES: 6.2.25
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic

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Section 1.3 - Right Triangle Trigonometry

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20. Construct an appropriate triangle to complete the table. $\left(0° \le \theta \le 90°, 0 \le \theta \le \frac{\pi}{2}\right)$

Function	θ*(deg)*	θ*(rad)*	*Function Value*
csc		$\frac{\pi}{6}$	

a.

Function	θ*(deg)*	θ*(rad)*	*Function Value*
csc	30°	$\frac{\pi}{6}$	2

b.

Function	θ*(deg)*	θ*(rad)*	*Function Value*
csc	90°	$\frac{\pi}{6}$	1

c.

Function	θ*(deg)*	θ*(rad)*	*Function Value*
csc	45°	$\frac{\pi}{6}$	$\sqrt{2}$

d.

Function	θ*(deg)*	θ*(rad)*	*Function Value*
csc	0°	$\frac{\pi}{6}$	0

e.

Function	θ*(deg)*	θ*(rad)*	*Function Value*
csc	30°	$\frac{\pi}{6}$	$\frac{2\sqrt{3}}{3}$

ANSWER: a
POINTS: 1
REFERENCES: 6.2.26
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 11/25/2014 12:53 AM
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21. Use the given function value(s) and trigonometric identities (including the cofunction identities) to find the indicated trigonometric functions.

$\sin 30° = \frac{1}{2}$, $\cos 30° = \frac{\sqrt{3}}{2}$

$\sin 60°$ and $\cos 60°$

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Section 1.3 - Right Triangle Trigonometry

a. $\sin 60° = 2$ and $\cos 60° = \frac{1}{2}$

b. $\sin 60° = \sqrt{3}$ and $\cos 60° = \frac{1}{2}$

c. $\sin 60° = \frac{\sqrt{3}}{2}$ and $\cos 60° = \sqrt{2}$

d. $\sin 60° = \frac{\sqrt{3}}{2}$ and $\cos 60° = \frac{1}{2}$

e. $\sin 60° = \frac{\sqrt{3}}{2}$ and $\cos 60° = 2$

ANSWER: d
POINTS: 1
REFERENCES: 6.2.31
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
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22. Use the given function value(s) and trigonometric identities (including the cofunction identities) to find the indicated trigonometric functions.

$\sin 90° = 1$, $\tan 90°$ = Not defined

$\sin 0°$ and $\tan 0°$

a. $\sin 0° = 0$ and $\tan 0° = 0$
b. $\sin 0° = 1$ and $\tan 0° = 1$
c. $\sin 0°$ = Not defined and $\tan 0°$ = Not defined
d. $\sin 0°$ = Not defined and $\tan 0° = 1$
e. $\sin 0° = 1$ and $\tan 0°$ = Not defined

ANSWER: a
POINTS: 1
REFERENCES: 6.2.32
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
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23. Use the given function value(s) and trigonometric identities (including the cofunction identities) to find the indicated trigonometric functions.

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Section 1.3 - Right Triangle Trigonometry

$\cos\theta = \frac{1}{3}$

sec θ and csc$(90° - \theta)$

a. $\sec\theta = \frac{1}{3}$ and $\csc(90° - \theta) = \frac{1}{3}$

b. $\sec\theta = 3$ and $\csc(90° - \theta) = 3$

c. $\sec\theta = \frac{1}{3}$ and $\csc(90° - \theta) = 3$

d. $\sec\theta = 3$ and $\csc(90° - \theta) = \frac{1}{3}$

e. $\sec\theta = -3$ and $\csc(90° - \theta) = -3$

ANSWER: b
POINTS: 1
REFERENCES: 6.2.33
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
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24. Use the given function value(s) and trigonometric identities (including the cofunction identities) to find the indicated trigonometric functions.

$\sec\theta = 9$

cos θ

a. $\cos\theta = 9$

b. $\cos\theta = \frac{1}{9}$

c. $\cos\theta = -\frac{1}{9}$

d. $\cos\theta = -9$

e. $\cos\theta = 0$

ANSWER: b
POINTS: 1
REFERENCES: 6.2.34
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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25. Use the given function value(s) and trigonometric identities (including the cofunction identities) to find the indicated trigonometric functions.

$\cot \alpha = 9$

$\tan \alpha$ and $\cot(90^\circ - \alpha)$

a. $\tan \alpha = -\frac{1}{9}$ and $\cot(90^\circ - \alpha) = -\frac{1}{9}$

b. $\tan \alpha = \frac{1}{9}$ and $\cot(90^\circ - \alpha) = 9$

c. $\tan \alpha = \frac{1}{9}$ and $\cot(90^\circ - \alpha) = \frac{1}{9}$

d. $\tan \alpha = 9$ and $\cot(90^\circ - \alpha) = 9$

e. $\tan \alpha = 9$ and $\cot(90^\circ - \alpha) = \frac{1}{9}$

ANSWER: c
POINTS: 1
REFERENCES: 6.2.35
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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26. Use the given function value(s) and trigonometric identities (including the cofunction identities) to find the indicated trigonometric functions.

$\cos \beta = \frac{\sqrt{3}}{8}$

$\sec \beta$ and $\sin(90^\circ - \beta)$

a. $\sec \beta = \frac{8\sqrt{3}}{3}$ and $\sin(90^\circ - \beta) = \frac{\sqrt{3}}{8}$

b. $\sec \beta = \sqrt{3}$ and $\sin(90^\circ - \beta) = 8$

c. $\sec \beta = \frac{\sqrt{3}}{8}$ and $\sin(90^\circ - \beta) = \frac{\sqrt{3}}{8}$

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d. $\sec\beta = \frac{\sqrt{3}}{8}$ and $\sin(90° - \beta) = \frac{8\sqrt{3}}{3}$

e. $\sec\beta = \frac{8\sqrt{3}}{3}$ and $\sin(90° - \beta) = \frac{8\sqrt{3}}{3}$

ANSWER: a
POINTS: 1
REFERENCES: 6.2.36
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
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27. Find the values of θ in degrees $(0° \le \theta \le 90°)$ and radians $\left(0 \le \theta \le \frac{\pi}{2}\right)$ without the aid of a calculator.

$\sin\theta = 1$ and $\csc\theta = 1$

a. $90° = \frac{\pi}{2}$
b. $30° = \frac{\pi}{6}$
c. $0° = 0$
d. $60° = \frac{\pi}{3}$
e. $45° = \frac{\pi}{4}$

ANSWER: a
POINTS: 1
REFERENCES: 6.2.55
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
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28. Find the values of θ in degrees $(0° \le \theta \le 90°)$ and radians $\left(0 \le \theta \le \frac{\pi}{2}\right)$ without the aid of a calculator.

$\cos\theta = 0$ and $\tan\theta =$ Not defined

a. $90° = \frac{\pi}{2}$

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b. $60° = \frac{\pi}{3}$

c. $0° = 0$

d. $30° = \frac{\pi}{6}$

e. $45° = \frac{\pi}{4}$

ANSWER: a
POINTS: 1
REFERENCES: 6.2.56
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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29. Find the values of θ in degrees $(0° \le \theta \le 90°)$ and radians $\left(0 \le \theta \le \frac{\pi}{2}\right)$ without the aid of a calculator.

$\sec \theta = \sqrt{2}$ and $\cot \theta = 1$

a. $45° = \frac{\pi}{4}$

b. $90° = \frac{\pi}{2}$

c. $0° = 0$

d. $60° = \frac{\pi}{3}$

e. $30° = \frac{\pi}{6}$

ANSWER: a
POINTS: 1
REFERENCES: 6.2.57
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 11/25/2014 7:20 AM
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30. You are skiing down a mountain with a vertical height of 1250 feet. The distance from the top of the mountain to the base is 2500 feet. What is the angle of elevation from the base to the top of the mountain?

a. $60° = \frac{\pi}{3}$

b. $30° = \frac{\pi}{6}$

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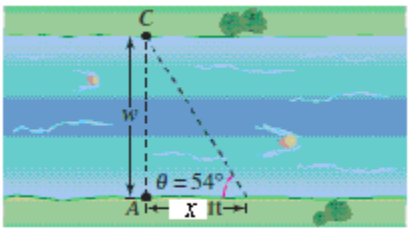
c. $0° = 0$

d. $90° = \frac{\pi}{2}$

e. $45° = \frac{\pi}{4}$

ANSWER: b
POINTS: 1
REFERENCES: 6.2.67
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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31. A biologist wants to know the width w of a river so that instruments for studying the pollutants in the water can be set properly. From point A the biologist walks downstream $x = 170$ feet and sights to point C (see figure). From this sighting, it is determined that $\theta = 54°$. How wide is the river?



(Round your answer to three decimal places.)

a. 253.985 ft
b. 238.985 ft
c. 248.985 ft
d. 243.985 ft
e. 233.985 ft

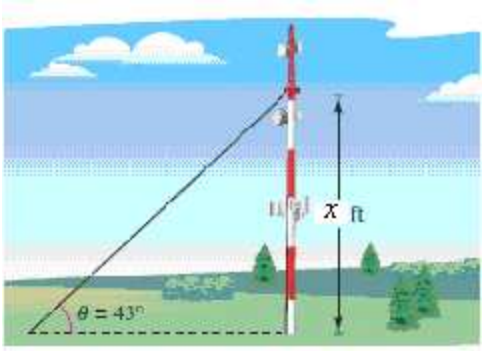
ANSWER: e
POINTS: 1
REFERENCES: 6.2.68
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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32. A guy wire runs from the ground to a cell tower. The wire is attached to the cell tower $x = 160$ feet above the ground. The angle formed between the wire and the ground is 43° (see figure). How long is the guy wire?

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Section 1.3 - Right Triangle Trigonometry

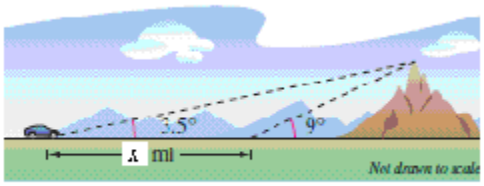


(Round your answer to one decimal place.)

a. 254.6 ft
b. 234.6 ft
c. 244.6 ft
d. 249.6 ft
e. 239.6 ft

ANSWER: b
POINTS: 1
REFERENCES: 6.2.69
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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33. In traveling across flat land, you notice a mountain directly in front of you. Its angle of elevation (to the peak) is 3.5°. After you drive $x = 15$ miles closer to the mountain, the angle of elevation is 9°. Approximate the height of the mountain.



(Round your answer to one decimal place.)

a. 9.5 mi
b. 1.5 mi
c. 3.5 mi
d. 7.5 mi
e. 5.5 mi

ANSWER: b
POINTS: 1

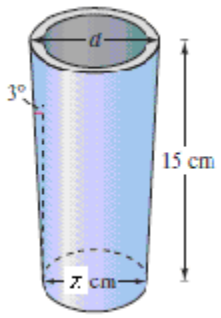
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Section 1.3 - Right Triangle Trigonometry

REFERENCES: 6.2.70
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
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34. A tapered shaft has a diameter of $x = 9$ centimeters at the small end and is 15 centimeters long (see figure). The taper is 3°. Find the diameter *d* of the large end of the shaft. (Round your answer to two decimal places.)



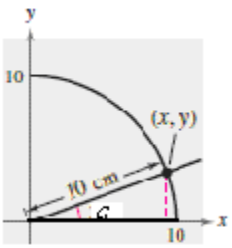
a. 10.57 cm
b. 14.57 cm
c. 12.57 cm
d. 18.57 cm
e. 16.57 cm

ANSWER: a
POINTS: 1
REFERENCES: 6.2.72
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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35. Use a compass to sketch a quarter of a circle of radius 10 centimeters. Using a protractor, construct an angle of $a = 10°$ in standard position (see figure). Drop a perpendicular line from the point of intersection of the terminal side of the angle and the arc of the circle. By actual measurement, calculate the coordinates (x, y) of the point of intersection and use these measurements to approximate the six trigonometric functions of the "a" angle. (Round your answer to two decimal places.)

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a. $\sin 10° \approx 0.98$, $\cos 10° \approx 0.17$, $\tan 10° \approx 5.76$, $\csc 10° \approx 0.18$, $\sec 10° \approx 1.02$, $\cot 10° \approx 5.67$

b. $\sin 10° \approx 5.67$, $\cos 10° \approx 1.02$, $\tan 10° \approx 5.76$, $\csc 10° \approx 0.18$, $\sec 10° \approx 0.98$, $\cot 10° \approx 5.67$

c. $\sin 10° \approx 0.17$, $\cos 10° \approx 0.98$, $\tan 10° \approx 0.18$, $\csc 10° \approx 5.76$, $\sec 10° \approx 1.02$, $\cot 10° \approx 5.67$

d. $\sin 10° \approx 0.18$, $\cos 10° \approx 0.98$, $\tan 10° \approx 0.17$, $\csc 10° \approx 10$, $\sec 10° \approx 0.98$, $\cot 10° \approx 5.76$

e. $\sin 10° \approx 0.17$, $\cos 10° \approx 0.98$, $\tan 10° \approx 0.18$, $\csc 10° \approx 5.76$, $\sec 10° \approx 5.67$, $\cot 10° \approx 1.02$

ANSWER:	c
POINTS:	1
REFERENCES:	6.2.73
QUESTION TYPE:	Multi-Mode (Multiple choice)
HAS VARIABLES:	True
STUDENT ENTRY MODE:	Basic
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36. A 20-meter line is used to tether a helium-filled balloon. Because of a breeze, the line makes an angle of approximately 85° with the ground. Use a trigonometric function to write an equation involving the unknown quantity.

a. $\sin 85° = \frac{h}{20}$ (where h is height.)

b. $\cos 85° = \frac{h}{20}$ (where h is height.)

c. $\cos 85° = \frac{20}{h}$ (where h is height.)

d. $\sin 85° = \frac{20}{h}$ (where h is height.)

e. $\tan 85° = \frac{h}{20}$ (where h is height.)

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Section 1.3 - Right Triangle Trigonometry

ANSWER: a
POINTS: 1
REFERENCES: 6.2.74(b)
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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37. A 20-meter line is used to tether a helium-filled balloon. Because of a breeze, the line makes an angle of approximately 65° with the ground. What is the height of the balloon? (Round the answer to one decimal place.)

a. 22.1 m
b. 18.1 m
c. 20.1 m
d. 26.1 m
e. 24.1 m

ANSWER: b
POINTS: 1
REFERENCES: 6.2.74(c)
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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38. A 20-meter line is used to tether a helium-filled balloon. Complete the table, which shows the heights (in meters) of the balloon for decreasing angle measures θ between the line and the ground. (Round your answers to one decimal place.)

Angle, θ	70°	60°	50°	40°	30°
Height					

Angle, θ	70°	60°	50°	40°	30°
Height					

a.

Angle, θ	70°	60°	50°	40°	30°
Height	16.8	17.3	15.3	12.9	10.0

b.

Angle, θ	70°	60°	50°	40°	30°
Height	18.8	17.3	15.3	12.9	10.0

c.

Angle, θ	70°	60°	50°	40°	30°
Height	15.8	17.3	15.3	12.9	10.0

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d.

Angle, θ	70°	60°	50°	40°	30°
Height	14.8	17.3	15.3	12.9	10.0

e.

Angle, θ	70°	60°	50°	40°	30°
Height	17.8	17.3	15.3	12.9	10.0

ANSWER: b
POINTS: 1
REFERENCES: 6.2.74e
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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39. Use a graphing utility to complete the table. (Round your answers to two decimal places.)

θ	20°	30°	40°	50°	60°
$\cos\theta$					
$\sin(90° - \theta)$					

a.

θ	20°	30°	40°	50°	60°
$\cos\theta$	0.94	0.5	0.77	0.87	0.5
$\sin(90° - \theta)$	0.94	0.5	0.77	0.87	0.5

b.

θ	20°	30°	40°	50°	60°
$\cos\theta$	0.5	0.64	0.77	0.87	0.94
$\sin(90° - \theta)$	0.94	0.87	0.77	0.64	0.5

c.

θ	20°	30°	40°	50°	60°
$\cos\theta$	0.94	0.87	0.77	0.64	0.5
$\sin(90° - \theta)$	0.94	0.87	0.77	0.64	0.5

d.

θ	20°	30°	40°	50°	60°
$\cos\theta$	0.94	0.87	0.77	0.64	0.5
$\sin(90° - \theta)$	0.5	0.64	0.77	0.87	0.94

e.

θ	20°	30°	40°	50°	60°
$\cos\theta$	0	0.87	0.77	0.64	0.5

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$\sin(90° - \theta)$	0	0.87	0.77	0.64	0.5

ANSWER: c
POINTS: 1
REFERENCES: 6.2.85
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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40. Complete the table.

θ	0.8	0.9	1	1.1	1.2
$\sin\theta$					

(Round your answers to four decimal places.)

a.

θ	0.8	0.9	1	1.1	1.2
$\sin\theta$	0.7174	0.7833	0.8415	0.8912	0.932

b.

θ	0.8	0.9	1	1.1	1.2
$\sin\theta$	0	1	2	3	4

c.

θ	0.8	0.9	1	1.1	1.2
$\sin\theta$	0.932	0.8912	0.8415	0.7833	0.7174

d.

θ	0.8	0.9	1	1.1	1.2
$\sin\theta$	0.7174	0.7174	0.8415	0.7174	0.932

e.

θ	0.8	0.9	1	1.1	1.2
$\sin\theta$	0.8	0.9	1	1.1	1.2

ANSWER: a
POINTS: 1
REFERENCES: 6.2.83
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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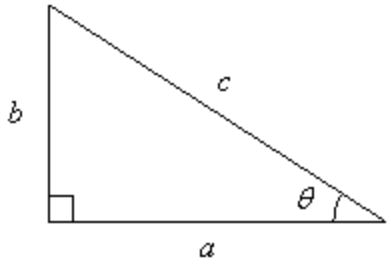
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Section 1.3 - Right Triangle Trigonometry

DATE MODIFIED: 6/4/2021 6:18 AM

41. Find the exact value of csc θ using the triangle shown in the figure below, if $a = 4$ and $b = 3$.



a. $\frac{3}{5}$

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

c. $\frac{5}{4}$

d. $\frac{4}{5}$

e. $\frac{5}{3}$

ANSWER: e
POINTS: 1
REFERENCES: 6.2.6
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
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42. If θ is an acute angle and $\cot\theta = \frac{1}{4}$, determine $\sin\theta$.

a. $\sin\theta = \frac{\sqrt{17}}{4}$

b. $\sin\theta = \sqrt{17}$

c. $\sin\theta = 4$

d. $\sin\theta = \frac{\sqrt{17}}{17}$

e. $\sin\theta = \frac{4\sqrt{17}}{17}$

ANSWER: e

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Section 1.3 - Right Triangle Trigonometry

POINTS: 1
REFERENCES: 6.2.13
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
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43. Given $\sin 30° = \frac{1}{2}$ and $\cos 30° = \frac{\sqrt{3}}{2}$, determine the following:

cot 30°

a. $\cot 30° = \frac{\sqrt{2}}{2}$

b. undefined

c. $\cot 30° = \frac{\sqrt{3}}{3}$

d. $\cot 30° = \sqrt{3}$

e. $\cot 30° = 2$

ANSWER: d
POINTS: 1
REFERENCES: 6.2.31
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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44. Using trigonometric identities, determine which of the following is equivalent to the following expression.

$(\sin \theta + \cos \theta)^2$

a. 1

b. $1 + 2\sin \theta \cos \theta$

c. $\sin^2 \theta + \cos^2 \theta$

d. $\cos \theta + \cot \theta$

e. $\sec \theta + 2\csc \theta$

ANSWER: b
POINTS: 1
REFERENCES: 6.2.37
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic

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Section 1.3 - Right Triangle Trigonometry

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45. Use a calculator to evaluate tan 49°34′. Round your answer to four decimal places.

a. –1.3283
b. 0.0423
c. –0.8403
d. 1.1643
e. 1.1736

ANSWER: e
POINTS: 1
REFERENCES: 6.2.47a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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46. Use a calculator to evaluate $\csc\left(\frac{\pi}{10}\right)$. Round your answer to four decimal places.

a. –1.8382
b. –24.0997
c. 0.3090
d. 3.2361
e. –0.0415

ANSWER: d
POINTS: 1
REFERENCES: 6.2.51a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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47. If $\sin\theta = \frac{\sqrt{2}}{2}$, find the value of θ in degrees $(0° \le \theta \le 90°)$ without the aid of a calculator.

a. $\theta = 30°$
b. $\theta = 45°$
c. $\theta = 90°$
d. $\theta = 75°$
e. $\theta = 15°$

ANSWER: b

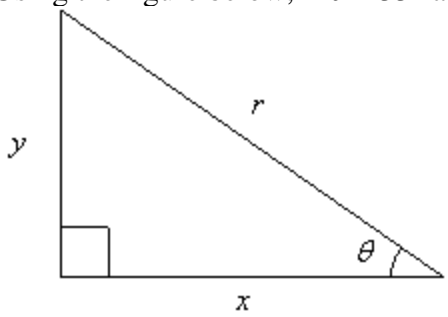
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Section 1.3 - Right Triangle Trigonometry

POINTS: 1
REFERENCES: 6.2.55a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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48. Using the figure below, if $\theta = 33°$ and $y = 9$, determine the exact value of x.



a. $x = \dfrac{3}{\sin 11°}$

b. $x = \dfrac{9}{\tan 33°}$

c. $x = \dfrac{11}{\tan 3°}$

d. $x = \dfrac{9}{\cot 33°}$

e. $x = \dfrac{33}{\csc 9°}$

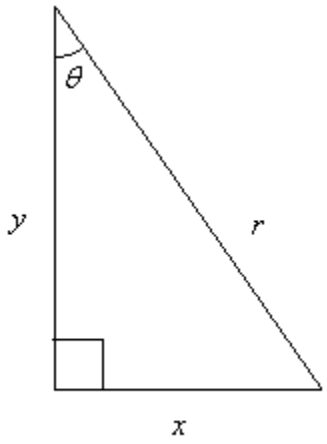
ANSWER: b
POINTS: 1
REFERENCES: 6.2.61
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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49. Using the figure below, if $\theta = 20°$ and $y = 16$, determine the exact value of r.

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Section 1.3 - Right Triangle Trigonometry



a. $r = \dfrac{5}{\cos 4^\circ}$

b. $r = \dfrac{16}{\cos 20^\circ}$

c. $r = \dfrac{4}{\csc 5^\circ}$

d. $r = \dfrac{16}{\tan 20^\circ}$

e. $r = \dfrac{16}{\sin 20^\circ}$

ANSWER: b
POINTS: 1
REFERENCES: 6.2.62
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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50. Will Barrow wanted to know how tall the flagpole was in front of his school. To find its height, he drove a stake into the ground at the tip of the flagpole's shadow and recorded the angle of elevation at two different times during the day. He then measured the distance between the stakes. Will's data is below:

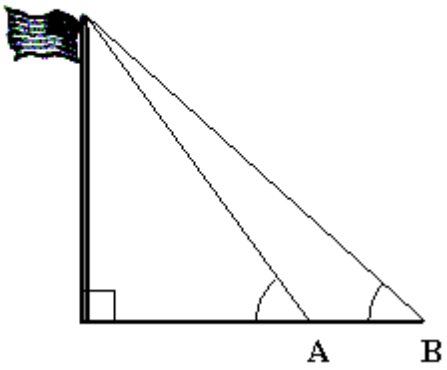
Stake	Time	Angle of Elevation
A	2:00 PM	82°
B	3:00 PM	61°
Distance between stakes A & B	10 feet	

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Section 1.3 - Right Triangle Trigonometry



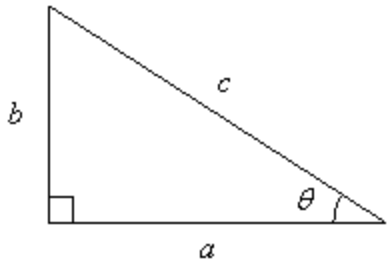


Determine the height of the flagpole. Round your answer to the nearest foot.

a. 22 feet
b. 24 feet
c. 20 feet
d. 26 feet
e. 18 feet

ANSWER: b
POINTS: 1
REFERENCES: 6.2.69a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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51. Find the exact value of csc θ, using the triangle shown in the figure below, if $a = 3$ and $b = 4$.



a. $\frac{5}{4}$
b. $\frac{5}{3}$
c. $\frac{3}{4}$

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d. $\frac{4}{5}$

e. $\frac{3}{5}$

ANSWER: a
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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52. Given $\sin 30° = \frac{1}{2}$ and $\cos 30° = \frac{\sqrt{3}}{2}$, determine the following.

sec 30°

a. sec 30° = 1
b. sec 30° = $\sqrt{3}$
c. sec 30° = $\frac{2\sqrt{3}}{3}$
d. sec 30° = $\frac{\sqrt{2}}{2}$
e. undefined

ANSWER: c
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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53. Given $\sec \theta = \sqrt{10}$ and $\tan \theta = 3$, determine the following.

$\cos(90° - \theta)$

a. $\cos(90° - \theta) = \frac{1}{3}$
b. $\cos(90° - \theta) = \frac{3\sqrt{10}}{10}$
c. $\cos(90° - \theta) = \frac{\sqrt{10}}{10}$

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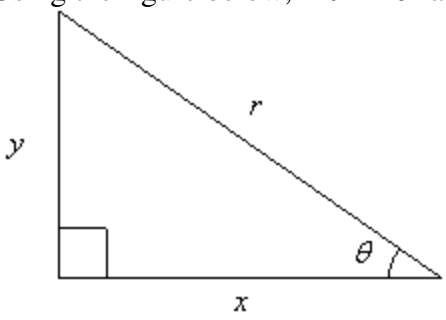
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d. $\cos(90° - \theta) = 3$

e. undefined

ANSWER: b
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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54. Using the figure below, if $\theta = 26°$ and $y = 6$, determine the exact value of x.



a. $x = \dfrac{6}{\cot 26°}$

b. $x = \dfrac{26}{\csc 6°}$

c. $x = \dfrac{6}{\tan 26°}$

d. $x = \dfrac{3}{\sin 13°}$

e. $x = \dfrac{13}{\tan 3°}$

ANSWER: c
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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55. Use a calculator to evaluate tan 68°23'. Round your answer to four decimal places.

a. 2.5236

b. 2.5040

c. –1.2222

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d. –0.8980
e. 0.7269

ANSWER: a
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 5/15/2015 5:41 AM

56. If $\sin\theta = \frac{\sqrt{2}}{2}$, find the value of θ in degrees $(0° \le \theta \le 90°)$ without the aid of a calculator.

a. $\theta = 45°$
b. $\theta = 30°$
c. $\theta = 15°$
d. $\theta = 90°$
e. $\theta = 75°$

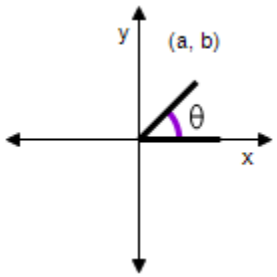
ANSWER: a
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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Section 1.4 - Trigonometric Functions of Any Angle

1. Determine the exact values of the three trigonometric functions sine, cosine, and tangent of the angle θ.



where $a = 5$ and $b = 12$

a. $\sin \theta = \frac{12}{13}$
$\cos \theta = \frac{5}{13}$
$\tan \theta = \frac{12}{5}$

b. $\sin \theta = \frac{5}{13}$
$\cos \theta = \frac{12}{13}$
$\tan \theta = \frac{12}{5}$

c. $\sin \theta = \frac{12}{5}$
$\cos \theta = \frac{5}{13}$
$\tan \theta = \frac{12}{13}$

d. $\sin \theta = \frac{12}{13}$
$\cos \theta = \frac{12}{5}$
$\tan \theta = \frac{5}{13}$

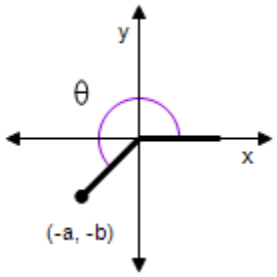
e. $\sin \theta = \frac{12}{13}$
$\cos \theta = \frac{5}{13}$
$\tan \theta = \frac{12}{13}$

ANSWER:	a
POINTS:	1
REFERENCES:	6.3.5a
QUESTION TYPE:	Multi-Mode (Multiple choice)
HAS VARIABLES:	True
STUDENT ENTRY MODE:	Basic
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2. Determine the exact values of the three trigonometric functions sine, cosine, and tangent of the angle θ.



where $a = 3$ and $b = 4$

a. $\sin\theta = -\frac{4}{5}$
$\cos\theta = -\frac{3}{5}$
$\tan\theta = \frac{4}{3}$

b. $\sin\theta = -\frac{4}{3}$
$\cos\theta = -\frac{3}{5}$
$\tan\theta = -\frac{4}{5}$

c. $\sin\theta = -\frac{3}{5}$
$\cos\theta = -\frac{4}{5}$
$\tan\theta = -\frac{4}{3}$

d. $\sin\theta = -\frac{4}{5}$
$\cos\theta = -\frac{4}{3}$
$\tan\theta = -\frac{3}{5}$

e. $\sin\theta = -\frac{4}{5}$
$\cos\theta = -\frac{3}{5}$
$\tan\theta = -\frac{4}{5}$

ANSWER: a
POINTS: 1
REFERENCES: 6.3.6a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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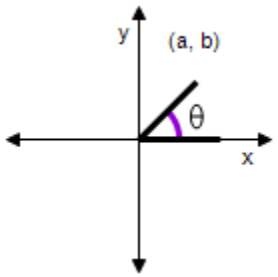
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Section 1.4 - Trigonometric Functions of Any Angle

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3. Determine the exact values of the three trigonometric functions csc, sec, and cot of the angle θ.



where $a = 5$ and $b = 12$

a. $\csc \theta = \frac{13}{5}$
$\sec \theta = \frac{13}{12}$
$\cot \theta = \frac{5}{12}$

b. $\csc \theta = \frac{13}{12}$
$\sec \theta = \frac{13}{5}$
$\cot \theta = \frac{13}{12}$

c. $\csc \theta = \frac{13}{12}$
$\sec \theta = \frac{13}{5}$
$\cot \theta = \frac{5}{12}$

d. $\csc \theta = \frac{5}{12}$
$\sec \theta = \frac{13}{5}$
$\cot \theta = \frac{13}{12}$

e. $\csc \theta = \frac{13}{12}$
$\sec \theta = \frac{5}{12}$
$\cot \theta = \frac{13}{5}$

ANSWER: c
POINTS: 1
REFERENCES: 6.3.5b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic

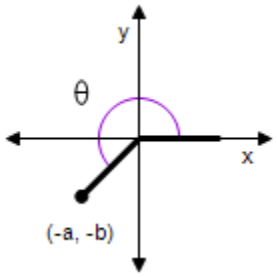
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Section 1.4 - Trigonometric Functions of Any Angle

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4. Determine the exact values of the three trigonometric functions csc, sec, and cot of the angle θ.



where $a = 3$ and $b = 4$.

a. $\csc \theta = -\frac{5}{4}$
$\sec \theta = -\frac{5}{3}$
$\cot \theta = \frac{3}{4}$

b. $\csc\theta = -\frac{5}{4}$
$\sec \theta = -\frac{3}{4}$
$\cot \theta = -\frac{5}{3}$

c. $\csc \theta = -\frac{5}{4}$
$\sec \theta = -\frac{5}{3}$
$\cot \theta = -\frac{5}{4}$

d. $\csc \theta = -\frac{3}{4}$
$\sec \theta = -\frac{5}{3}$
$\cot \theta = -\frac{5}{4}$

e. $\csc \theta = -\frac{5}{3}$
$\sec \theta = -\frac{5}{4}$
$\cot \theta = -\frac{3}{4}$

ANSWER: a
POINTS: 1
REFERENCES: 6.3.6b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True

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Section 1.4 - Trigonometric Functions of Any Angle

STUDENT ENTRY MODE: Basic
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5. The point is on the terminal side of an angle in standard position. Determine the exact values of the three trigonometric functions sine, cosine, and tangent of the angle θ.

(15, 8)

a. $\sin\theta = \frac{8}{17}$
$\cos\theta = \frac{8}{15}$
$\tan\theta = \frac{15}{17}$

b. $\sin\theta = \frac{8}{15}$
$\cos\theta = \frac{15}{17}$
$\tan\theta = \frac{8}{17}$

c. $\sin\theta = \frac{15}{17}$
$\cos\theta = \frac{8}{17}$
$\tan\theta = \frac{8}{15}$

d. $\sin\theta = \frac{8}{17}$
$\cos\theta = \frac{15}{17}$
$\tan\theta = \frac{8}{15}$

e. $\sin\theta = \frac{8}{17}$
$\cos\theta = \frac{15}{17}$
$\tan\theta = \frac{8}{17}$

ANSWER: d
POINTS: 1
REFERENCES: 6.3.9
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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6. The point is on the terminal side of an angle in standard position. Determine the exact values of the three trigonometric functions sine, cosine, and tangent of the angle θ.

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(5, 12)

a. $\sin\theta = \frac{12}{13}$
$\cos\theta = \frac{5}{13}$
$\tan\theta = \frac{12}{5}$

b. $\sin\theta = \frac{12}{13}$
$\cos\theta = \frac{5}{13}$
$\tan\theta = \frac{12}{13}$

c. $\sin\theta = \frac{12}{5}$
$\cos\theta = \frac{5}{13}$
$\tan\theta = \frac{12}{13}$

d. $\sin\theta = \frac{5}{13}$
$\cos\theta = \frac{12}{13}$
$\tan\theta = \frac{12}{5}$

e. $\sin\theta = \frac{12}{13}$
$\cos\theta = \frac{12}{5}$
$\tan\theta = \frac{5}{13}$

ANSWER: a
POINTS: 1
REFERENCES: 6.3.10
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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7. Find the values of the trigonometric functions sine and sec of θ with the given constraint.

Function Value	*Constraint*
$\tan\theta = -\frac{4}{3}$	$\sin\theta > 0$

a. $\sin\theta = -\frac{4}{5}$

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$\sec\theta = \frac{5}{3}$

b. $\sin\theta = \frac{4}{5}$

$\sec\theta = -\frac{5}{3}$

c. $\sin\theta = \frac{5}{3}$

$\sec\theta = -\frac{4}{5}$

d. $\sin\theta = \frac{4}{5}$

$\sec\theta = \frac{5}{3}$

e. $\sin\theta = -\frac{4}{5}$

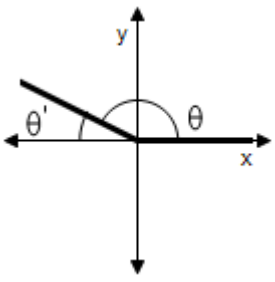
$\sec\theta = -\frac{5}{3}$

ANSWER:	b
POINTS:	1
REFERENCES:	6.3.19
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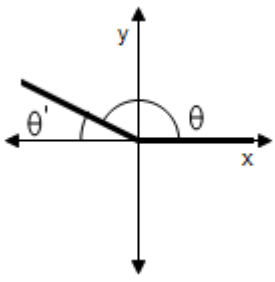
8. Find the reference angle θ', and sketch θ and θ' in standard position.

$\theta = 150°$

a. $\theta' = 20°$



b. $\theta' = 40°$



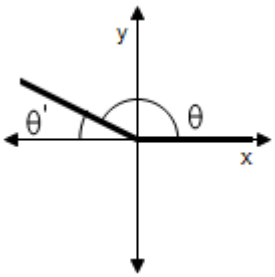
c. $\theta' = -30°$

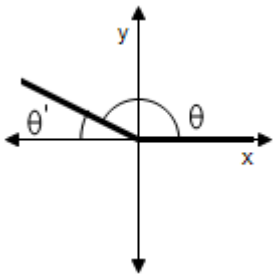
d. $\theta' = 30°$

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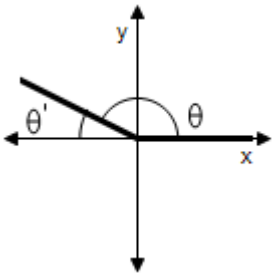
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Section 1.4 - Trigonometric Functions of Any Angle





e. $\theta' = 50°$



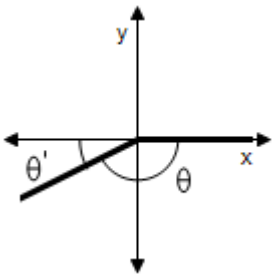
ANSWER: d
POINTS: 1
REFERENCES: 6.3.41
QUESTION TYPE: Multi-Mode (Multiple choice)
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STUDENT ENTRY MODE: Basic
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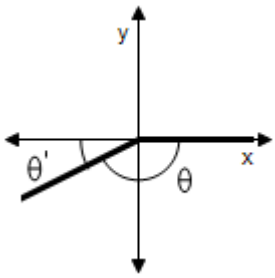
9. Find the reference angle θ', and sketch θ and θ' in standard position.

$\theta = -135°$

a. $\theta' = -45°$

b. $\theta' = 45°$



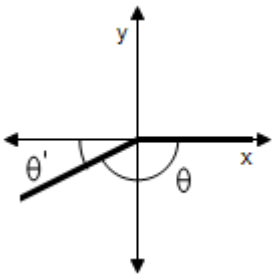


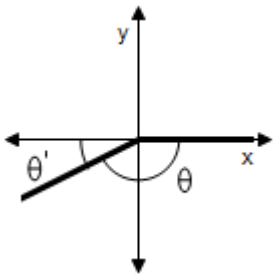
c. $\theta' = 35°$

d. $\theta' = 65°$

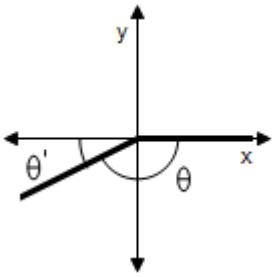
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Section 1.4 - Trigonometric Functions of Any Angle





e. $\theta' = 55^\circ$

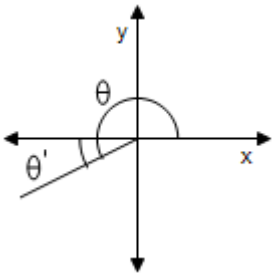


ANSWER: b
POINTS: 1
REFERENCES: 6.3.43
QUESTION TYPE: Multi-Mode (Multiple choice)
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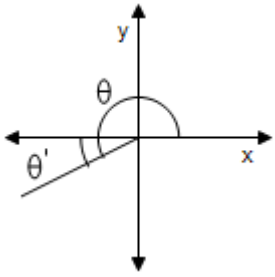
10. Find the reference angle θ', and sketch θ and θ' in standard position.

$\theta = \frac{8\pi}{7}$

a. $\theta' = \frac{\pi}{8}$



b. $\theta' = \frac{7\pi}{8}$

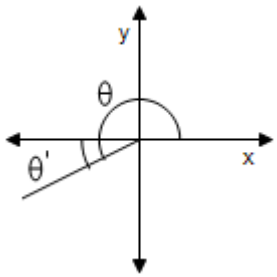


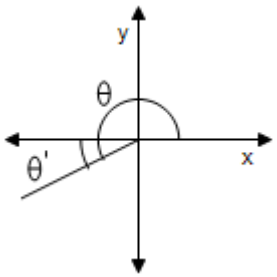
c. $\theta' = 8\pi$

d. $\theta' = \frac{\pi}{7}$

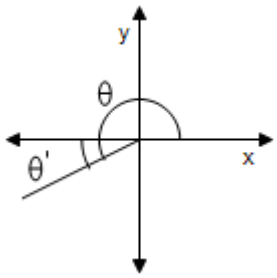
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e. $\theta' = 7\pi$



ANSWER: d
POINTS: 1
REFERENCES: 6.3.46
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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11. Find the reference angle θ'.

$\theta = 5.3$

a. $\theta' = \pi - 5.3$
b. $\theta' = 5.3 - 2\pi$
c. $\theta' = \pi + 5.3$
d. $\theta' = 2\pi - 5.3$
e. $\theta' = 2\pi + 5.3$

ANSWER: d
POINTS: 1
REFERENCES: 6.3.47
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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12. Find the reference angle θ'.

$\theta = 11.8$

a. $\theta' = 2\pi + 11.8$

b. $\theta' = 2\pi - 11.8$

c. $\theta' = 4\pi - 11.8$

d. $\theta' = 4\pi + 11.8$

e. $\theta' = 11.8 - 2\pi$

ANSWER: c
POINTS: 1
REFERENCES: 6.3.48
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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13. Evaluate the trigonometric function. Round your answer to four decimal places. (Be sure the calculator is set in the correct angle mode.)

sin 11°

a. 0.4908
b. 0.1908
c. 0.5908
d. 0.2908
e. 0.6908

ANSWER: b
POINTS: 1
REFERENCES: 6.3.71
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
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14. Evaluate the trigonometric function. Round your answer to four decimal places. (Be sure the calculator is set in the correct angle mode.)

sec 221°

a. –1.3250
b. –1.0250

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c. –0.8250
d. –0.9250
e. –1.2250

ANSWER: a
POINTS: 1
REFERENCES: 6.3.72
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 5/15/2015 6:57 AM

15. Evaluate the trigonometric function. Round your answer to four decimal places. (Be sure the calculator is set in the correct angle mode.)

$\cos(-1190°)$

a. –0.3420
b. 0.1580
c. –0.2420
d. –0.0420
e. 0.0580

ANSWER: a
POINTS: 1
REFERENCES: 6.3.73
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 5/26/2021 2:56 AM

16. Evaluate the trigonometric function. Round your answer to four decimal places. (Be sure the calculator is set in the correct angle mode.)

$\tan 306°$

a. –1.0764
b. –1.2764
c. –1.3764
d. –0.8764
e. –0.9764

ANSWER: c
POINTS: 1
REFERENCES: 6.3.75
QUESTION TYPE: Multi-Mode (Multiple choice)

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HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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17. Evaluate the trigonometric function. Round your answer to four decimal places. (Be sure the calculator is set in the correct angle mode.)

tan 4.9

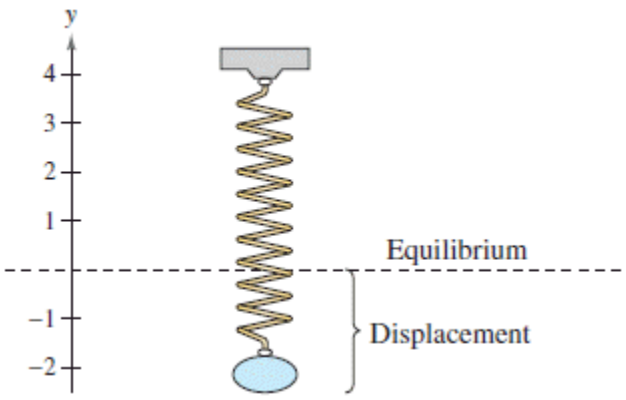
a. –4.9675
b. –4.8675
c. –5.1675
d. –4.7675
e. –5.2675

ANSWER: e
POINTS: 1
REFERENCES: 6.3.79
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 5/15/2015 7:02 AM

18. The displacement from equilibrium of an oscillating weight suspended by a spring is given by

$y = 2\cos 6t$

where y is the displacement in centimeters and t is the time in seconds (see figure). Find the displacement when $t = 3$. (Round your answers to nearest tenth.)



a. 1.7 cm
b. 1.6 cm
c. 1.5 cm
d. 1.3 cm

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e. 1.8 cm

ANSWER: d
POINTS: 1
REFERENCES: 6.3.107a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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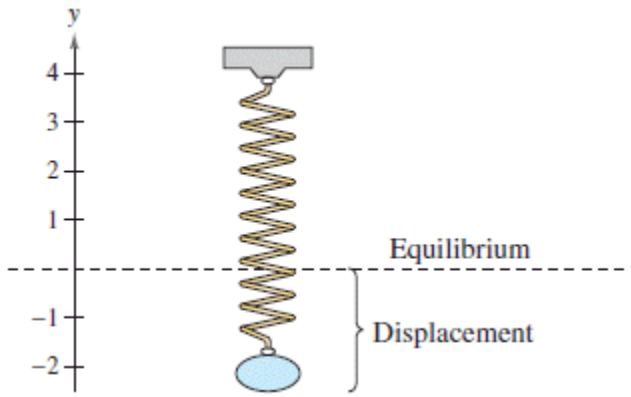
19. Evaluate the trigonometric function. Round your answer to four decimal places. (Be sure the calculator is set in the correct angle mode.)

sec 0.21

a. 1.5225
b. 1.1225
c. 1.4225
d. 1.0225
e. 1.3225

ANSWER: d
POINTS: 1
REFERENCES: 6.3.84
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
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20. The displacement from equilibrium of an oscillating weight suspended by a spring is given by $y = 2\cos 6t$, where y is the displacement in centimeters and t is the time in seconds (see figure). Find the displacement when $t = \frac{1}{8}$.(Round your answers to two decimal places.)



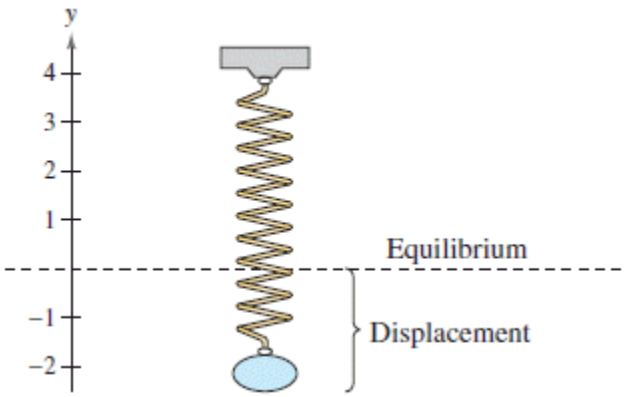
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a. 1.76 cm
b. 1.66 cm
c. 1.46 cm
d. 1.86 cm
e. 1.96 cm

ANSWER: c
POINTS: 1
REFERENCES: 6.3.107b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 11/26/2014 2:25 AM

21. The displacement from equilibrium of an oscillating weight suspended by a spring and subject to the damping effect of friction is given by $y = 2e^{-t}\cos 6t$ where y is the displacement in centimeters and t is the time in seconds (see figure). Find the displacement when $t = \frac{1}{5}$. Round your answer to two decimal places.



a. 0.89 cm
b. 0.59 cm
c. 0.99 cm
d. 1.09 cm
e. 0.79 cm

ANSWER: b
POINTS: 1
REFERENCES: 6.3.108b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic

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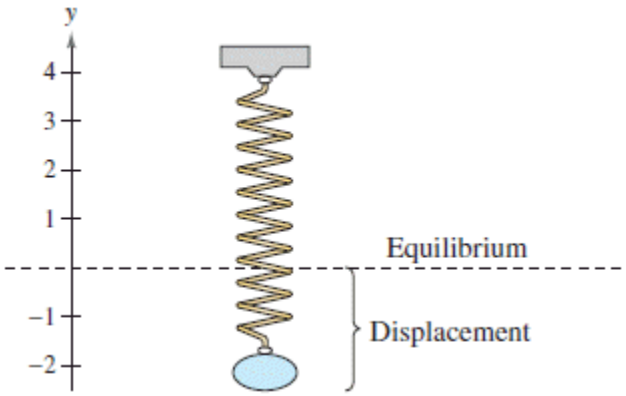
Section 1.4 - Trigonometric Functions of Any Angle

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22. The displacement from equilibrium of an oscillating weight suspended by a spring and subject to the damping effect of friction is given by

$y = 2e^{-t}\cos 6t$

where y is the displacement in centimeters and t is the time in seconds (see figure). Find the displacement when $t = \frac{1}{6}$. (Round your answer two decimal places.)



a. 0.71 cm
b. 1.11 cm
c. 1.31 cm
d. –0.91 cm
e. 0.91 cm

ANSWER: e
POINTS: 1
REFERENCES: 6.3.108b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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23. The current I (in amperes) when 100 volts is applied to a circuit is given by

$I = 5e^{-2t}\sin t$

where t is the time (in seconds) after the voltage is applied. Approximate the current at $t = 0.8$ second after the voltage is applied. (Round your answers to two decimal places.)

a. 1.12 ampere

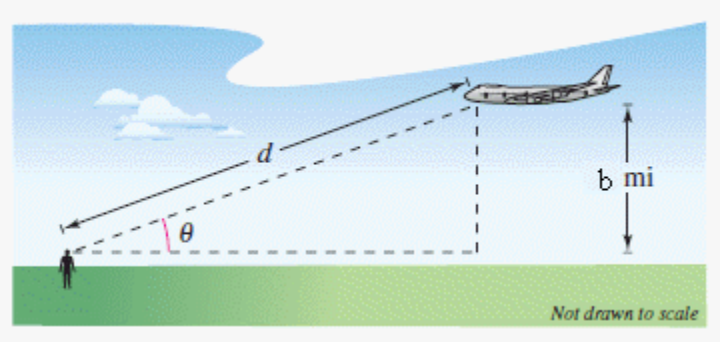
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b. 1.02 ampere
c. 0.72 ampere
d. 0.82 ampere
e. 0.92 ampere

ANSWER: c
POINTS: 1
REFERENCES: 6.3.109
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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24. An airplane, flying at an altitude of 4 miles, is on a flight path that passes directly over an observer (see figure). If θ is the angle of elevation from the observer to the plane, find the distance from the observer to the plane when $\theta = 70°$. (Round your answers to two decimal place.)



a. 6.26 mi
b. 5.26 mi
c. 4.26 mi
d. 7.26 mi
e. 8.26 mi

ANSWER: c
POINTS: 1
REFERENCES: 6.3.110
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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25. Determine whether the statement is true or false. Justify your answer.
In each of the four quadrants, the signs of the cosec function and cosine function will be the same.

a. True.

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b. False. In each of the four quadrants, the signs of the cosec function and the sine function will be the same because these functions are reciprocals of each other.

ANSWER: b
POINTS: 1
REFERENCES: 6.3.111
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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26. Evaluate the trigonometric function. Round your answer to four decimal places.

csc(–310°)

a. 2.3054
b. 3.3054
c. 1.3054
d. 4.3054
e. 1.8054

ANSWER: c
POINTS: 1
REFERENCES: 6.3.74
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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27. Evaluate the trigonometric function. Round your answer to four decimal places.

cot 171°

a. –5.3138
b. –4.3138
c. –6.3138
d. –3.3138
e. –5.8138

ANSWER: c
POINTS: 1
REFERENCES: 6.3.76
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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28. Evaluate the trigonometric function. Round your answer to four decimal places.

tan (–187°)

a. 0.8772
b. 1.8772
c. –0.1228
d. 2.8772
e. 0.3772

ANSWER: c
POINTS: 1
REFERENCES: 6.3.78
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
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29. Evaluate the trigonometric function. Round your answer to four decimal places.

$\tan\left(\frac{\pi}{3}\right)$

a. 2.2321
b. 1.7321
c. 2.7321
d. 3.7321
e. 4.7321

ANSWER: b
POINTS: 1
REFERENCES: 6.3.81
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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30. Evaluate the trigonometric function. Round your answer to four decimal places.

$\tan\left(-\frac{\pi}{8}\right)$

a. 0.5858
b. –0.4142

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c. 0.0858
d. 2.5858
e. 1.5858

ANSWER: b
POINTS: 1
REFERENCES: 6.3.82
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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31. Evaluate the trigonometric function. Round your answer to four decimal places.

$$\cot\left(-\frac{13\pi}{5}\right)$$

a. 0.8249
b. 3.3249
c. 0.3249
d. 2.3249
e. 1.3249

ANSWER: c
POINTS: 1
REFERENCES: 6.3.85
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
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32. Evaluate the trigonometric function. Round your answer to four decimal places.

$$\csc\left(-\frac{13\pi}{12}\right)$$

a. 1.8637
b. 3.8637
c. 4.3637
d. 6.8637
e. 4.8637

ANSWER: b
POINTS: 1
REFERENCES: 6.3.86

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HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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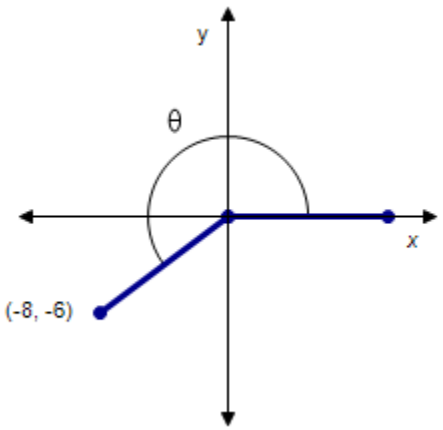
33. Evaluate the trigonometric function. Round your answer to four decimal places.

cot 3.35

a. 7.7286
b. 5.7286
c. 5.2286
d. 6.7286
e. 4.7286

ANSWER: e
POINTS: 1
REFERENCES: 6.3.80
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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34. Given the figure below, determine the value of $\sin \theta$.



a. $\sin \theta = \frac{3}{5}$

b. $\sin \theta = -\frac{3}{5}$

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c. $\sin\theta = \frac{1}{2}$

d. $\sin\theta = -\frac{1}{2}$

e. $\sin\theta = \frac{3}{4}$

ANSWER: b
POINTS: 1
REFERENCES: 6.3.6b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
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35. The point $(5, 12)$ is on the terminal side of an angle in standard position. Determine the exact value of $\sec\theta$.

a. $\sec\theta = \frac{5}{12}$

b. $\sec\theta = \frac{13}{5}$

c. $\sec\theta = \frac{12}{5}$

d. $\sec\theta = -\frac{5}{13}$

e. $\sec\theta = -\frac{5}{12}$

ANSWER: b
POINTS: 1
REFERENCES: 6.3.9
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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36. The point $(-7, -24)$ is on the terminal side of an angle in standard position. Determine the exact value of $\cos\theta$.

a. $\cos\theta = \frac{7}{24}$

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b. $\cos\theta = -\frac{18}{7}$

c. $\cos\theta = -\frac{7}{25}$

d. $\cos\theta = \frac{31}{7}$

e. $\cos\theta = \frac{24}{7}$

ANSWER: c
POINTS: 1
REFERENCES: 6.3.11
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
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37. State the quadrant in which θ lies if $\cot\theta < 0$ and $\sec\theta > 0$.

a. Quadrant II
b. Quadrant IV
c. Quadrant I
d. Quadrant III

ANSWER: b
POINTS: 1
REFERENCES: 6.3.15
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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38. Determine the exact value of $\cot\theta$ when $\cos\theta = \frac{3}{5}$ and $\cot\theta > 0$.

a. $\cot\theta = \frac{3}{4}$

b. $\cot\theta = \frac{4}{3}$

c. $\cot\theta = \frac{3}{2}$

d. $\cot\theta = \frac{7}{4}$

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e. $\cot\theta = \frac{2}{3}$

ANSWER: a
POINTS: 1
REFERENCES: 6.3.20
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
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39. Determine the exact value of $\csc\theta$ when $\cot\theta = \frac{20}{21}$ and $\csc\theta < 0$.

a. $\csc\theta = -\frac{11}{14}$

b. $\csc\theta = -\frac{3}{2}$

c. $\csc\theta = -\frac{58}{21}$

d. $\csc\theta = -\frac{8}{21}$

e. $\csc\theta = -\frac{29}{21}$

ANSWER: e
POINTS: 1
REFERENCES: 6.3.23
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
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40. The terminal side of θ lies on the line $-15x - 8y = 0$ in the fourth quadrant. Find the exact value of $\cos\theta$.

a. $\cos\theta = \frac{8}{17}$

b. $\cos\theta = \frac{8}{25}$

c. $\cos\theta = \frac{25}{52}$

d. $\cos\theta = \frac{17}{8}$

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e. $\cos\theta = \frac{25}{17}$

ANSWER: a
POINTS: 1
REFERENCES: 6.3.32
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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41. Determine the exact value of the secant of the angle π.

a. –1
b. 0
c. $-\frac{\sqrt{2}}{2}$
d. $\frac{1}{2}$
e. $-\frac{\sqrt{3}}{2}$

ANSWER: a
POINTS: 1
REFERENCES: 6.3.33
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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42. Determine the exact value of the tangent of the angle $\frac{\pi}{2}$.

a. $-\frac{\sqrt{2}}{2}$
b. $\frac{1}{2}$
c. $-\frac{\sqrt{3}}{2}$
d. 0
e. undefined

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ANSWER: e
POINTS: 1
REFERENCES: 6.3.39
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
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43. Determine the exact value of $\sin(-225°)$.

a. $\frac{\sqrt{2}}{2}$

b. $\frac{\sqrt{5}}{2}$

c. $-\frac{\sqrt{2}}{2}$

d. 1

e. –1

ANSWER: a
POINTS: 1
REFERENCES: 6.3.49
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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44. Use a calculator to evaluate cot 335°. Round your answer to four decimal places.

a. –2.1445
b. –2.6445
c. –0.4470
d. –1.1970
e. –1.7453

ANSWER: a
POINTS: 1
REFERENCES: 6.3.75
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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Section 1.4 - Trigonometric Functions of Any Angle

DATE MODIFIED: 5/15/2015 8:07 AM

45. Use a calculator to evaluate $\cot 3.3°$. Round your answer to four decimal places.

a. 17.3432
b. 17.8432
c. 6.2599
d. 13.8154
e. 5.5099

ANSWER: a
POINTS: 1
REFERENCES: 6.3.84
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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46. Given the equation below, determine two solutions such that $0° < \theta < 360°$.

$\sin \theta = -\frac{\sqrt{3}}{2}$

a. $\theta = 135°, 225°$
b. $\theta = 225°, 135°$
c. $\theta = 240°, 300°$
d. $\theta = 210°, 150°$
e. $\theta = 60°, 120°$

ANSWER: c
POINTS: 1
REFERENCES: 6.3.88a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
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47. Given the equation below, determine two solutions such that $0 < \theta < 2\pi$.

$\sec \theta = \frac{2\sqrt{3}}{3}$

a. $\theta = \frac{5\pi}{6}, \frac{7\pi}{6}$

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b. $\theta = \frac{11\pi}{8}, \frac{7\pi}{8}$

c. $\theta = \frac{\pi}{2}, \frac{5\pi}{8}$

d. $\theta = \frac{2\pi}{3}, \frac{\pi}{3}$

e. $\theta = \frac{11\pi}{6}, \frac{\pi}{6}$

ANSWER: e
POINTS: 1
REFERENCES: 6.3.90b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
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48. Find the point (x, y) on the unit circle that corresponds to the real number $\frac{\pi}{4}$. Use your results to evaluate tan t.

a. $\tan t = -\frac{\sqrt{3}}{2}$

b. $\tan t = 0$

c. $\tan t = \frac{\sqrt{3}}{2}$

d. $\tan t = 1$

e. $\tan t =$ undefined

ANSWER: d
POINTS: 1
REFERENCES: 6.3.93
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 5/15/2015 7:13 AM

49. Find the point (x, y) on the unit circle that corresponds to the real number $t = -\frac{\pi}{6}$. Use your results to evaluate cos t.

a. cos $t = 1$
b. cos $t = -1$

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c. $\cos t = -\frac{\sqrt{3}}{2}$

d. $\cos t = \frac{\sqrt{3}}{2}$

e. $\cos t = \frac{1}{2}$

ANSWER: d
POINTS: 1
REFERENCES: 6.3.95
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
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50. The displacement from equilibrium of an oscillating weight suspended by a spring is given by $y(t) = 4\cos(8t)$, where y is the displacement in centimeters and t is the time in seconds. Find the displacement when $t = 1.25$, rounding your answer to four decimal places.

a. 2.2693 cm
b. –3.3563 cm
c. –0.7275 cm
d. –6.5364 cm
e. 10.0903 cm

ANSWER: b
POINTS: 1
REFERENCES: 6.3.108
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
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51. The point (8, 15) is on the terminal side of an angle in standard position. Determine the exact value of $\sin\theta$.

a. $\sin\theta = \frac{17}{15}$

b. $\sin\theta = \frac{17}{8}$

c. $\sin\theta = \frac{8}{17}$

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d. $\sin\theta = -\frac{15}{17}$

e. $\sin\theta = \frac{15}{17}$

ANSWER: e
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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52. The point (–3,–4) is on the terminal side of an angle in standard position. Determine the exact value of $\cos\theta$.

a. $\cos\theta = \frac{3}{4}$

b. $\cos\theta = \frac{7}{3}$

c. $\cos\theta = -\frac{3}{5}$

d. $\cos\theta = -\frac{2}{3}$

e. $\cos\theta = \frac{4}{3}$

ANSWER: c
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 5/26/2021 4:36 AM

53. State the quadrant in which θ lies if $\cos\theta > 0$ and $\sin\theta > 0$.

a. Quadrant II
b. Quadrant III
c. Quadrant IV
d. Quadrant I

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

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Section 1.4 - Trigonometric Functions of Any Angle

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54. Use a calculator to evaluate $\sin 5°$. Round your answer to four decimal places.

a. –0.9589
b. 0.0872
c. –0.4128
d. –0.4282
e. –1.7089

ANSWER: b
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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Section 1.5 - Graphs of Sine and Cosine Functions

1. Find the period and amplitude.

$y = -7 \sin x$

a. Period: π; Amplitude: -7
b. Period: π; Amplitude: $\frac{1}{7}$
c. Period: 2π; Amplitude: 7
d. Period: 2π; Amplitude: $-\frac{1}{7}$
e. Period: 2π; Amplitude: 1

ANSWER: c
POINTS: 1
REFERENCES: 6.4.11
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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2. Find the period and amplitude.

$y = 7 \sin 40x$

a. Period: π; Amplitude: -7
b. Period: π; Amplitude: $\frac{1}{7}$
c. Period: $\frac{\pi}{20}$; Amplitude: $-\frac{1}{7}$
d. Period: 2π; Amplitude: 1
e. Period: $\frac{\pi}{20}$; Amplitude: 7

ANSWER: e
POINTS: 1
REFERENCES: 6.4.13
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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3. Find the period and amplitude.

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Section 1.5 - Graphs of Sine and Cosine Functions

$$y = \frac{4}{5}\cos\frac{4x}{5}$$

a. Period: 2π; Amplitude: 1
b. Period: $\frac{\pi}{2}$; Amplitude: $\frac{1}{5}$
c. Period: π; Amplitude: $\frac{5}{4}$
d. Period: π; Amplitude: 5
e. Period: $\frac{5\pi}{2}$; Amplitude: $\frac{4}{5}$

ANSWER: e
POINTS: 1
REFERENCES: 6.4.15
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
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4. Find the period and amplitude.

$$y = \frac{4}{5}\sin 2\pi x$$

a. Period: 1; Amplitude: $\frac{4}{5}$
b. Period: π; Amplitude: $\frac{5}{4}$
c. Period: 2π; Amplitude: 1
d. Period: $\frac{\pi}{2}$; Amplitude: $\frac{1}{5}$
e. Period: π; Amplitude: 5

ANSWER: a
POINTS: 1
REFERENCES: 6.4.17
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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5. Find the relationship between the graphs of f and g. Consider amplitude, period, and shifts.

$f(x) = \sin x$

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$g(x) = \sin(x - 5\pi)$

a. g is a shift of f 2π units downwards.
b. g is a shift of f π units upwards.
c. g is a shift of f $\frac{\pi}{5}$ units to the right.
d. g is a shift of f 5π units to the left.
e. g is a shift of f 5π units to the right.

ANSWER: e
POINTS: 1
REFERENCES: 6.4.19
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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6. Find the relationship between the graphs of f and g. Consider amplitude, period, and shifts.

$f(x) = \cos 2x$
$g(x) = -\cos 2x$

a. g is a shift of f π units to the left.
b. g is a reflection of f in the x-axis.
c. g is a shift of f π units to the right.
d. g is a shift of f 2 units to the upward.
e. g is a reflection of f in the y-axis.

ANSWER: b
POINTS: 1
REFERENCES: 6.4.21
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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7. Find the relationship between the graphs of f and g. Consider amplitude, period, and shifts.

$f(x) = \cos x$
$g(x) = \cos 2x$

a. The period of g is 2 times the period of f.
b. g is a reflection of f in the y-axis.
c. The period of f is 2 times the period of g.
d. f is a reflection of g in the x-axis.
e. g is a shift of f π units to the right.

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Section 1.5 - Graphs of Sine and Cosine Functions

ANSWER: c
POINTS: 1
REFERENCES: 6.4.23
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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8. Find the relationship between the graphs of f and g. Consider amplitude, period, and shifts.

$f(x) = \sin 7x$
$g(x) = 5 + \sin 7x$

a. The period of g is 5 times the period of f.
b. g is a shift of f 7 units downward.
c. g is a shift of f 5 units upward.
d. g is a shift of f 5 units downward.
e. f is a reflection of g in the x-axis.

ANSWER: c
POINTS: 1
REFERENCES: 6.4.25
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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9. Find the relationship between the graphs of f and g. Consider amplitude, period, and shifts.

$f(x) = \cos 6x$
$g(x) = -4 + \cos 6x$

a. g is a shift of f 4 units upward.
b. g is a shift of f 4 units downward.
c. The period of g is 4 times the period of f.
d. f is a reflection of g in the x-axis.
e. g is a shift of f 6 units downward.

ANSWER: b
POINTS: 1
REFERENCES: 6.4.26
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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Section 1.5 - Graphs of Sine and Cosine Functions

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10. Find the relationship between the graphs of f and g. Consider amplitude, period, and shifts.

$f(x) = \sin x$
$g(x) = \sin 5x$

a. The period of g is 5 times the period of f.
b. g is a shift of f π units to the right.
c. g is a reflection of f in the y-axis.
d. The period of f is 5 times the period of g.
e. f is a reflection of g in the x-axis.

ANSWER: d
POINTS: 1
REFERENCES: 6.4.24
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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11. Find the relationship between the graphs of f and g. Consider amplitude, period, and shifts.

$f(x) = \sin 6x$
$g(x) = \sin (-6x)$

a. g is a shift of f π units to the left.
b. g is a shift of f π units to the right.
c. g is a shift of f 6 units to the upward.
d. g is a reflection of f in the y-axis.
e. g is a reflection of f in the x-axis.

ANSWER: d
POINTS: 1
REFERENCES: 6.4.22
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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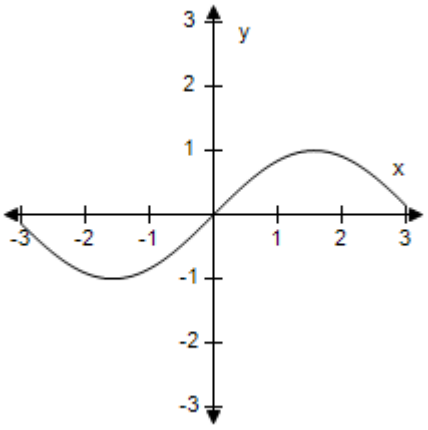
12. Select the graph of the function. (Include two full periods.)

$y = \sin 2x$

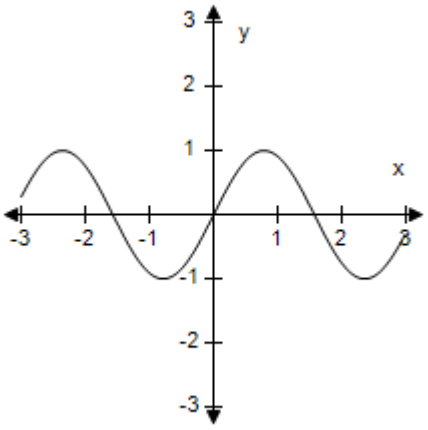
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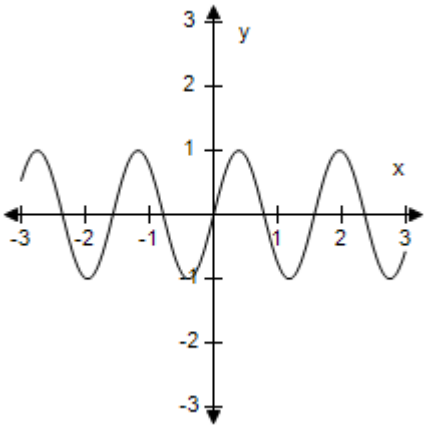
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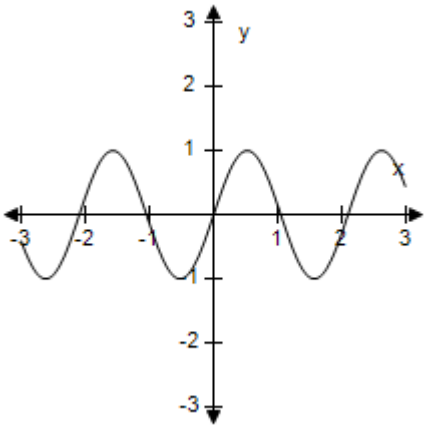
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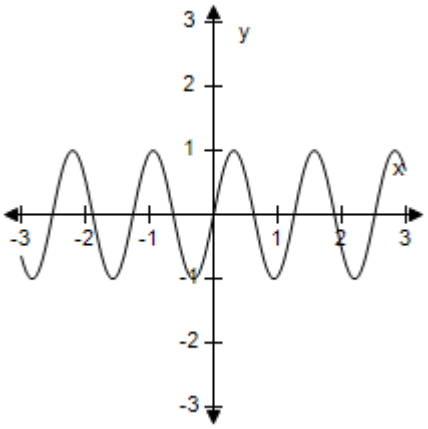
c.



d.



e.



ANSWER:	b
POINTS:	1
REFERENCES:	6.4.44
QUESTION TYPE:	Multi-Mode (Multiple choice)
HAS VARIABLES:	True
STUDENT ENTRY MODE:	Basic
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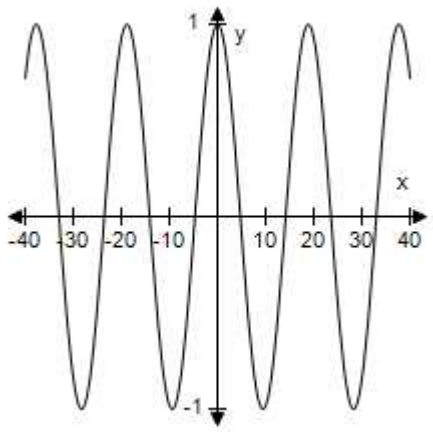
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Section 1.5 - Graphs of Sine and Cosine Functions

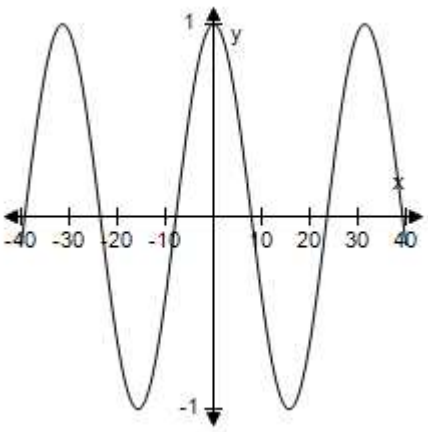
13. Select the graph of the function. (Include two full periods.)

$$y = \cos\frac{x}{6}$$

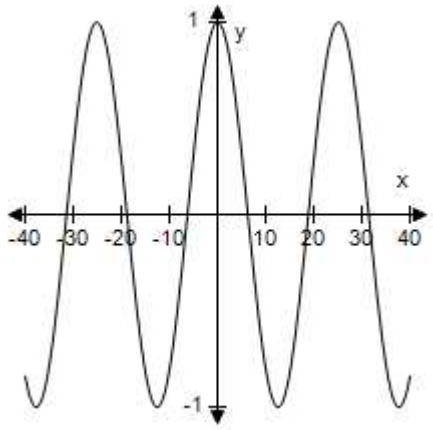
a.



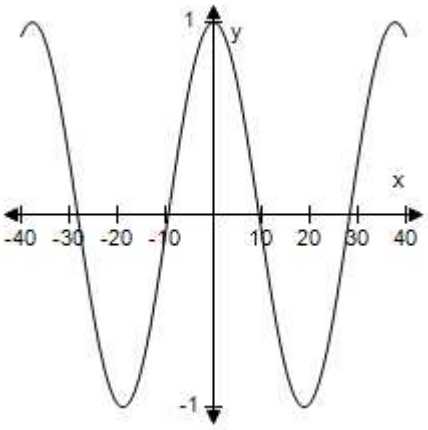
b.



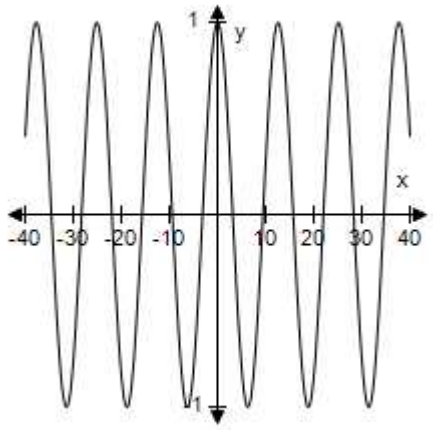
c.



d.



e.



ANSWER: d
POINTS: 1
REFERENCES: 6.4.43

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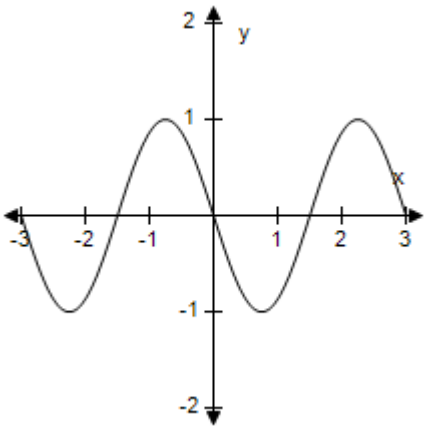
Section 1.5 - Graphs of Sine and Cosine Functions

QUESTION TYPE: Multi-Mode (Multiple choice)
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STUDENT ENTRY MODE: Basic
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DATE MODIFIED: 5/26/2021 5:01 AM

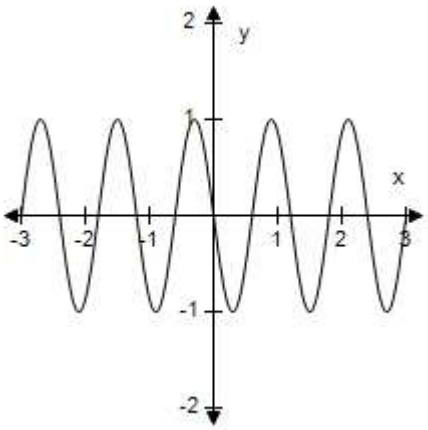
14. Select the graph of the function. (Include two full periods.)

$$y = -\sin\frac{8\pi x}{3}$$

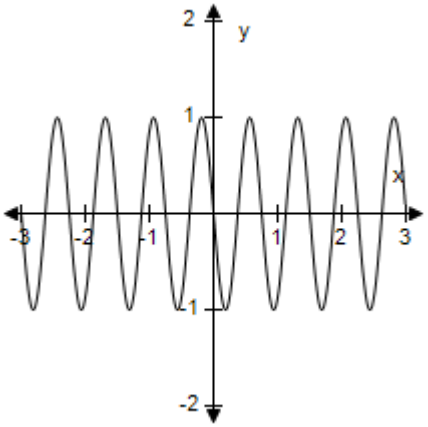
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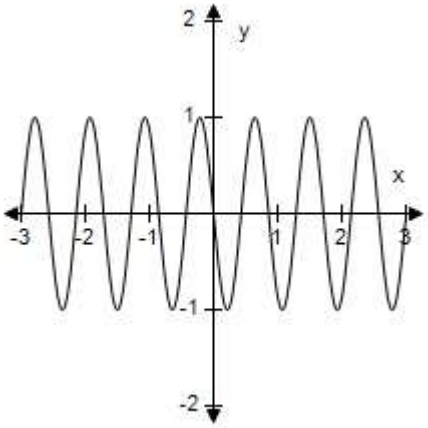
b.



c.



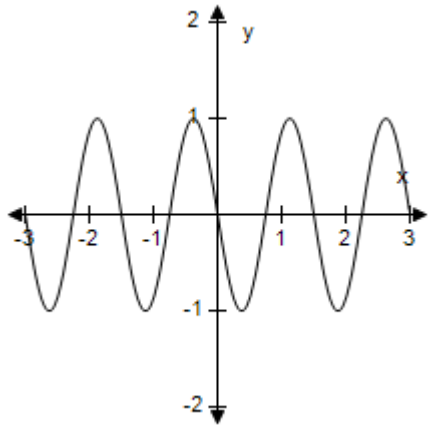
d.



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e.

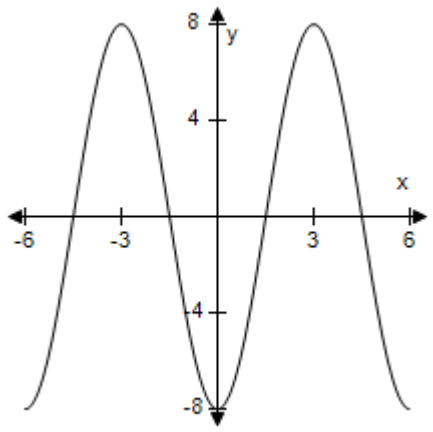


ANSWER: c
POINTS: 1
REFERENCES: 6.4.47
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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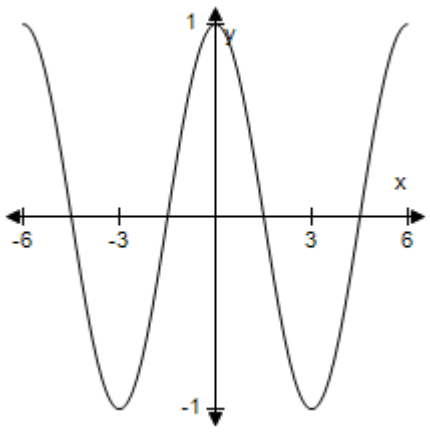
15. Select the graph of the function. (Include two full periods.)

$$y = -6\cos\frac{\pi x}{3}$$

a.



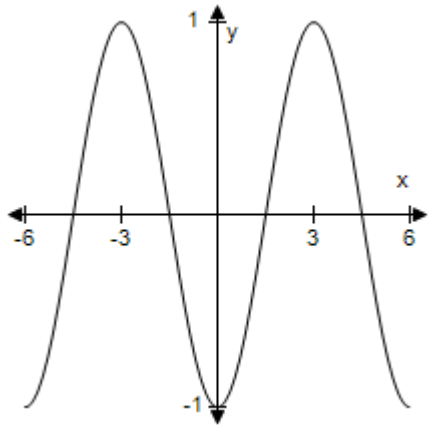
b.



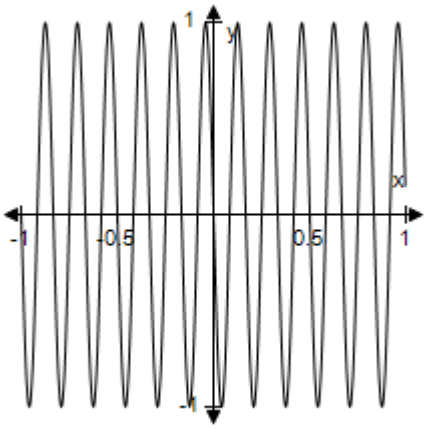
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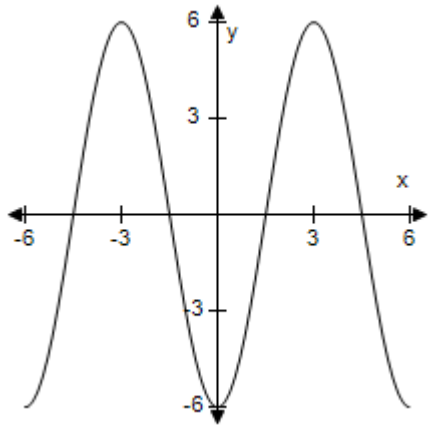
c.



d.



e.



ANSWER: e
POINTS: 1
REFERENCES: 6.4.48
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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DATE MODIFIED: 11/24/2014 8:01 AM

16. Select the graph of the function. (Include two full periods.)

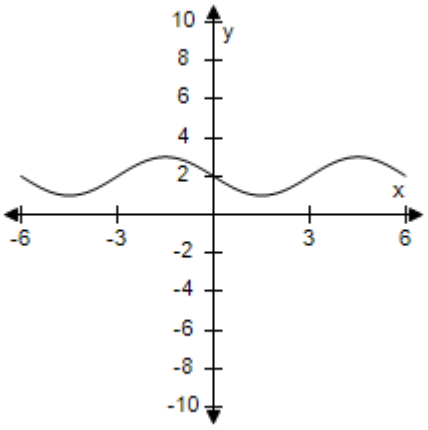
$$y = 2 - \sin \frac{2\pi x}{3}$$

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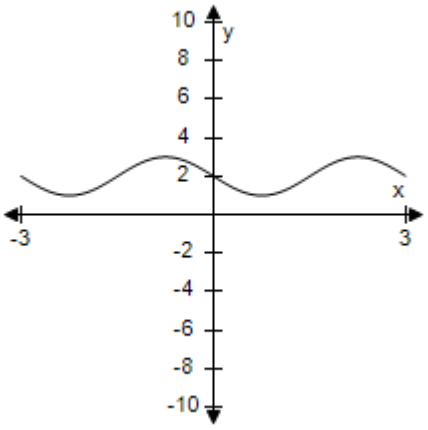
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Section 1.5 - Graphs of Sine and Cosine Functions

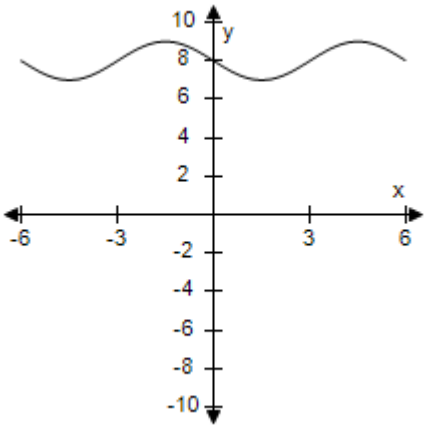
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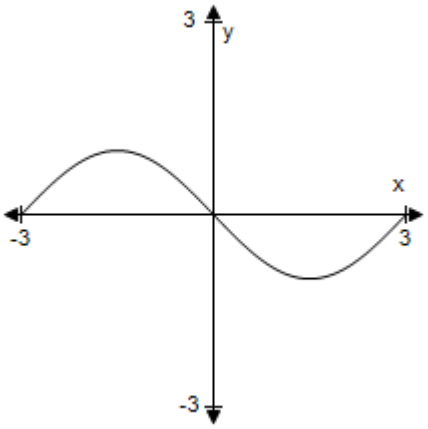
b.



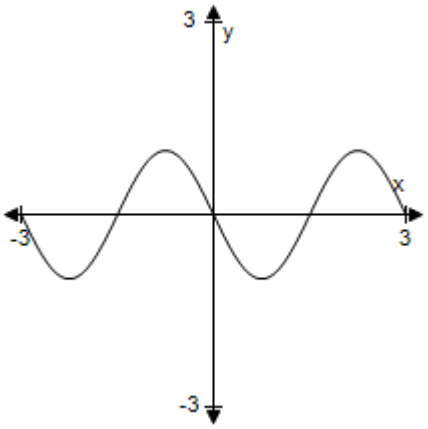
c.



d.



e.



ANSWER: b
POINTS: 1
REFERENCES: 6.4.53
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 11/22/2014 7:58 AM

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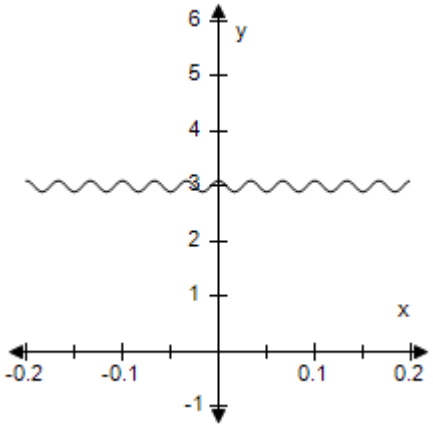
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Section 1.5 - Graphs of Sine and Cosine Functions

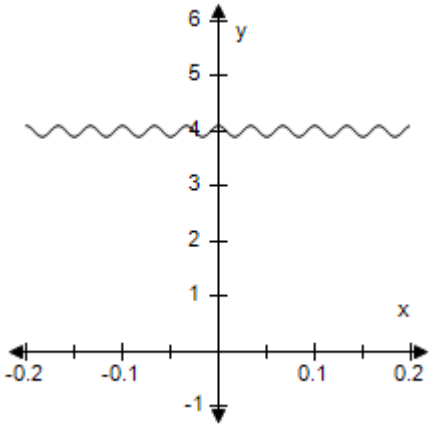
17. Select the graph of the function. (Include two full periods.)

$$y = 4 + \frac{1}{10}\cos 60\ \pi x$$

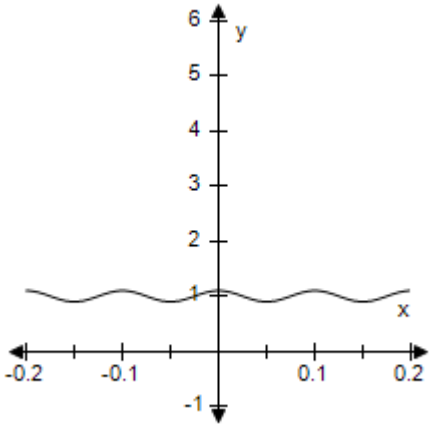
a.



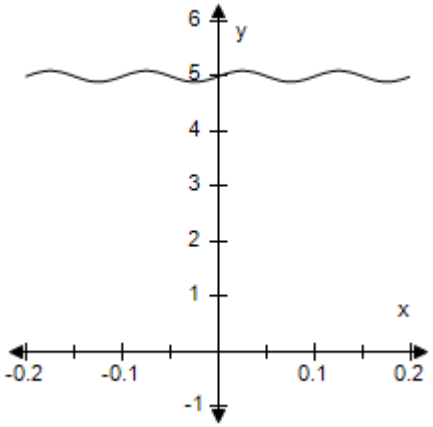
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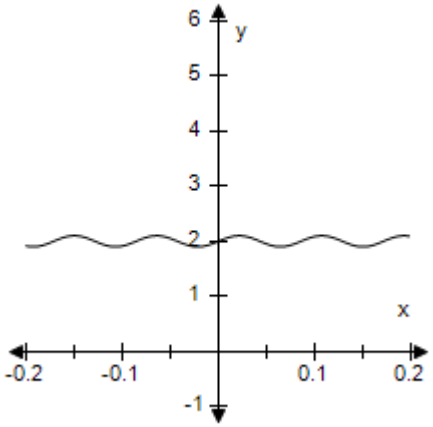
c.



d.



e.



ANSWER: b
POINTS: 1
REFERENCES: 6.4.55

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Section 1.5 - Graphs of Sine and Cosine Functions

QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 11/24/2014 7:02 AM

18. Function g is related to a parent function $f(x) = \sin(x)$.

$g(x) = \sin(2x - \pi)$

Describe the sequence of transformations from f to g.

a. $g(x)$ is obtained by a horizontal shrink of 2, and one cycle of $g(x)$ corresponds to the interval $\left[\frac{\pi}{2}, \frac{3\pi}{2}\right]$.

b. $g(x)$ is obtained by a vertical shrink of 2, and one cycle of $g(x)$ corresponds to the interval $\left[\frac{\pi}{2}, \frac{3\pi}{2}\right]$.

c. $g(x)$ is obtained by a vertical shrink of 2, and one cycle of $g(x)$ corresponds to the interval $[\pi, 3\pi]$.

d. $f(x)$ is obtained by a horizontal shrink of 2, and one cycle of $f(x)$ corresponds to the interval $[\pi, 3\pi]$.

e. $f(x)$ is obtained by a horizontal shrink of 2, and one cycle of $f(x)$ corresponds to the interval $\left[\frac{\pi}{2}, \frac{3\pi}{2}\right]$.

ANSWER: a
POINTS: 1
REFERENCES: 6.4.61a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 5/15/2015 8:51 AM

19. Function g is related to a parent function $f(x) = \cos(x)$.

$g(x) = \cos(8x - \pi) + 7$

Describe the sequence of transformation from f to g.

a. One cycle of $g(x)$ corresponds to the interval $[\pi, 3\pi]$ and $g(x)$ is obtained by shifting $f(x)$ downward 7 units.

b. One cycle of $g(x)$ corresponds to the interval $\left[\frac{\pi}{8}, \frac{3\pi}{8}\right]$ and $g(x)$ is obtained by shifting $f(x)$ upward 7 units.

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c. One cycle of $f(x)$ corresponds to the interval $\left[\frac{\pi}{8}, \frac{3\pi}{8}\right]$ and $g(x)$ is obtained by shifting $g(x)$ upward 7 units.

d. One cycle of $g(x)$ corresponds to the interval $\left[\frac{\pi}{8}, \frac{3\pi}{8}\right]$ and $g(x)$ is obtained by shifting $f(x)$ downward 7 units.

e. One cycle of $g(x)$ corresponds to the interval $[\pi, 3\pi]$ and $g(x)$ is obtained by shifting $f(x)$ upward 7 units.

ANSWER: b
POINTS: 1
REFERENCES: 6.4.63a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 5/15/2015 8:57 AM

20. Function g is related to a parent function $f(x) = \sin(x)$.

$g(x) = \sin(4x - \pi)$

Use function notation to write g in terms of f.

a. $g(x) = f(\pi - 3x)$

b. $g(x) = f\left(x + \frac{\pi}{5}\right)$

c. $g(x) = f(4x - \pi)$

d. $g(x) = f\left(\frac{\pi}{3} + x\right)$

e. $g(x) = -f\left(x - \frac{\pi}{5}\right)$

ANSWER: c
POINTS: 1
REFERENCES: 6.4.61c
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 5/15/2015 8:59 AM

21. Function g is related to a parent function $f(x) = \cos(x)$.

$g(x) = \cos(6x - \pi) + 7$

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Section 1.5 - Graphs of Sine and Cosine Functions

Use function notation to write g in terms of f.

a. $g(x) = f(6x + \pi) + 12$
b. $g(x) = f(6x + \pi) + 8$
c. $g(x) = f(6x - \pi) - 10$
d. $g(x) = f(6x - \pi) + 7$
e. $g(x) = f(6x + \pi) - 14$

ANSWER: d
POINTS: 1
REFERENCES: 6.4.63c
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 4/8/2021 3:06 AM

22. Function g is related to a parent function $f(x) = \sin(x)$.

$g(x) = 4\sin(4x - \pi) - 3$

Describe the sequence of transformation from f to g.

a. One cycle of $g(x)$ is $\left[\frac{\pi}{4}, \frac{3\pi}{4}\right]$. $g(x)$ is also shifted down 4 units and has an amplitude of 4.

b. One cycle of $f(x)$ is $\left[\frac{\pi}{4}, \frac{3\pi}{4}\right]$. $f(x)$ is also shifted down 3 units and has an amplitude of 4.

c. One cycle of $g(x)$ is $\left[\frac{\pi}{4}, \frac{3\pi}{4}\right]$. $g(x)$ is also shifted down 3 units and has an amplitude of 4.

d. One cycle of $g(x)$ is $\left[\frac{\pi}{4}, \frac{3\pi}{4}\right]$. $g(x)$ is also shifted up 3 units and has an amplitude of 4.

e. One cycle of $g(x)$ is $[\pi, 3\pi]$. $g(x)$ is also shifted down 3 units and has an amplitude of 3.

ANSWER: c
POINTS: 1
REFERENCES: 6.4.65a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 5/15/2015 9:01 AM

23. Function g is related to a parent function $f(x) = \sin(x)$.

$g(x) = 4\sin(4x - \pi) - 3$

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Section 1.5 - Graphs of Sine and Cosine Functions

Use function notation to write g in terms of f.

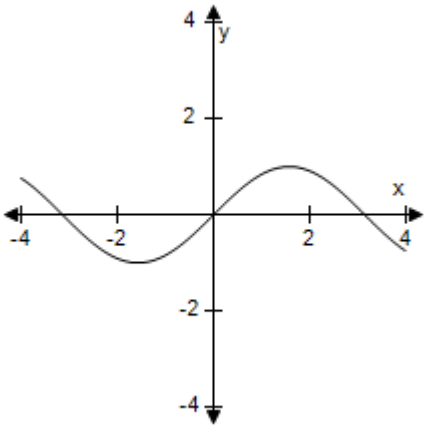
a. $g(x) = 4f(4x - \pi) - 6$
b. $g(x) = 3f(4x - \pi) - 10$
c. $g(x) = 3f(4x - \pi) + 4$
d. $g(x) = 4f(4x + \pi) - 8$
e. $g(x) = 4f(4x - \pi) - 3$

ANSWER: e
POINTS: 1
REFERENCES: 6.4.65c
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 5/15/2015 9:02 AM

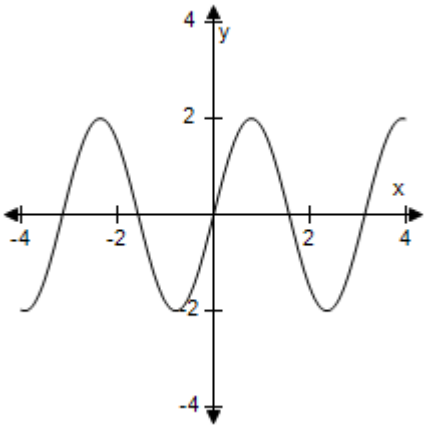
24. Use a graphing utility to select the graph of the function. Include two full periods.

$y = -2 \sin(2x + \pi)$

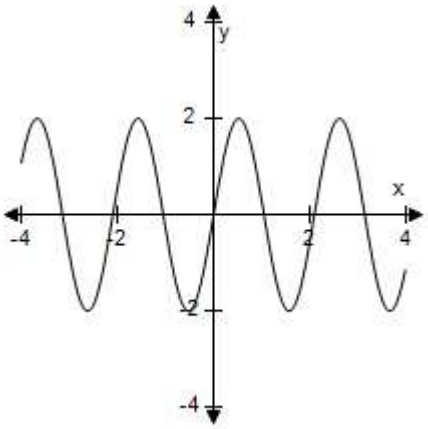
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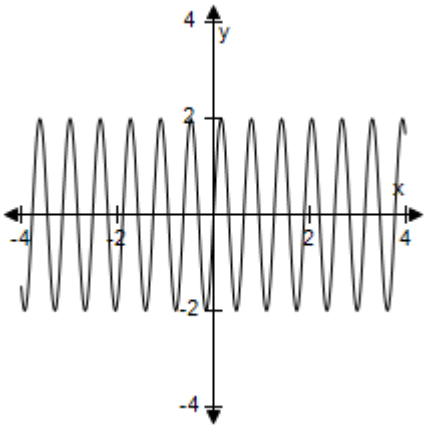
b.



c.



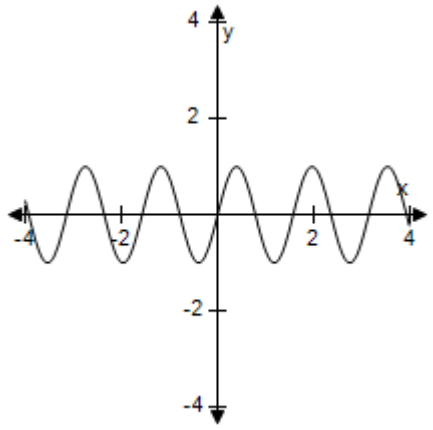
d.



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e.

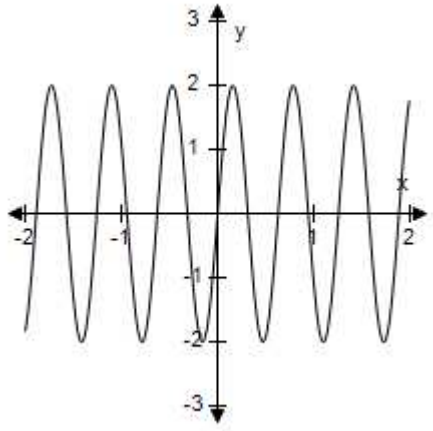


ANSWER: b
POINTS: 1
REFERENCES: 6.4.67
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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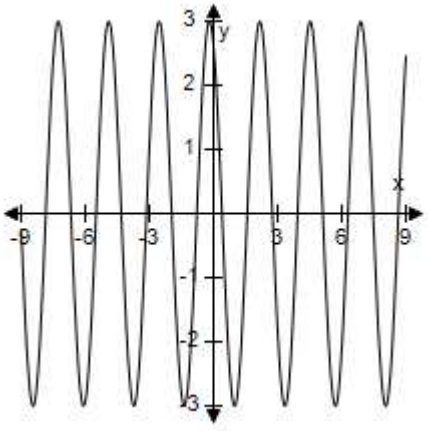
25. Use a graphing utility to select the graph of the function. Include two full periods.

$$y = -2\sin\left(\frac{8}{3}x - \frac{\pi}{3}\right)$$

a.



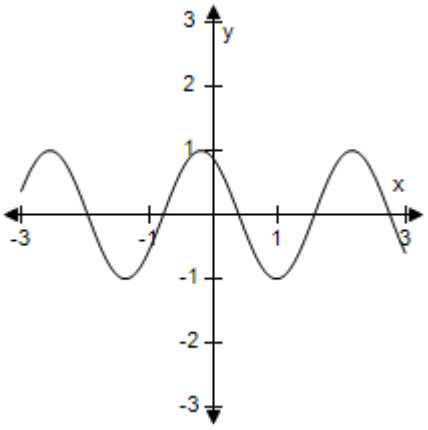
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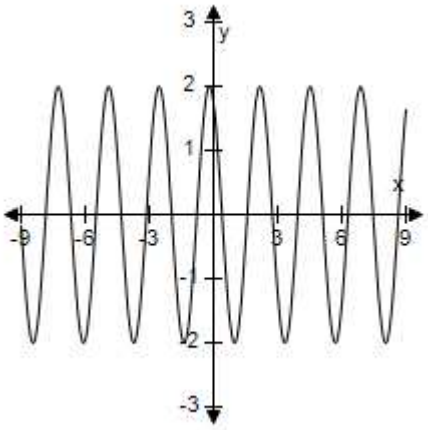
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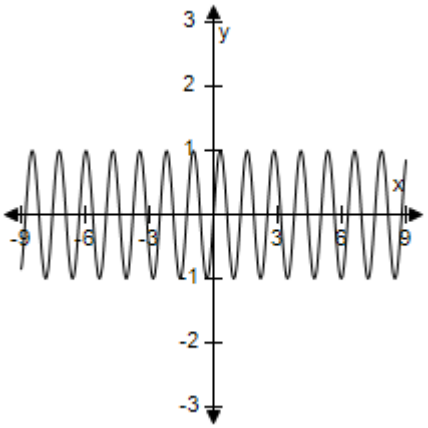
c.



d.



e.



ANSWER: d
POINTS: 1
REFERENCES: 6.4.68
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 5/18/2015 9:35 AM

26. Use a graphing utility to select the graph of the function. Include two full periods.

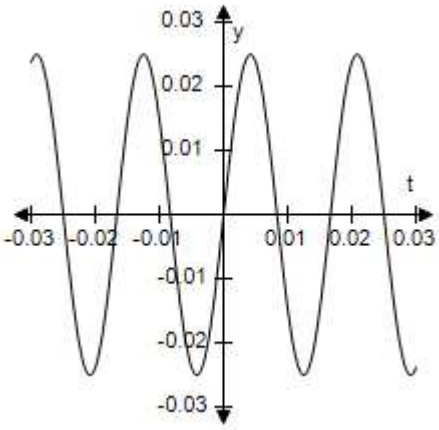
$$y = \frac{1}{100} \sin 110\pi t$$

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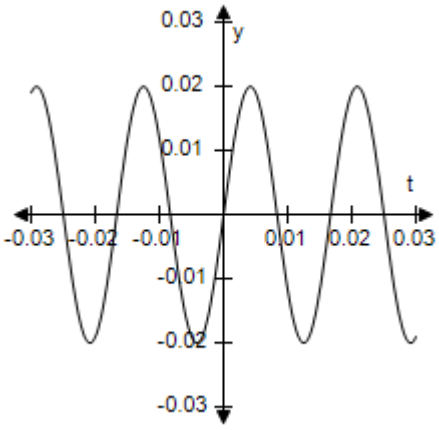
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Section 1.5 - Graphs of Sine and Cosine Functions

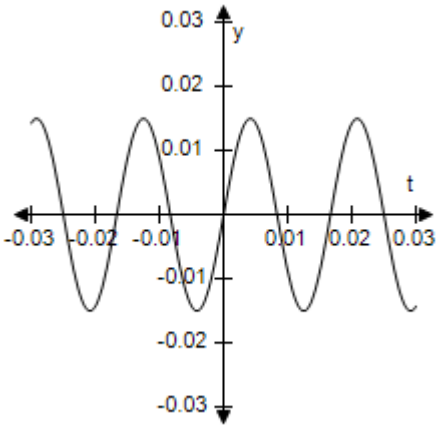
a.



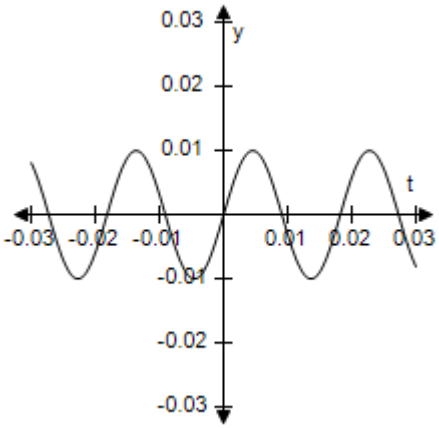
b.



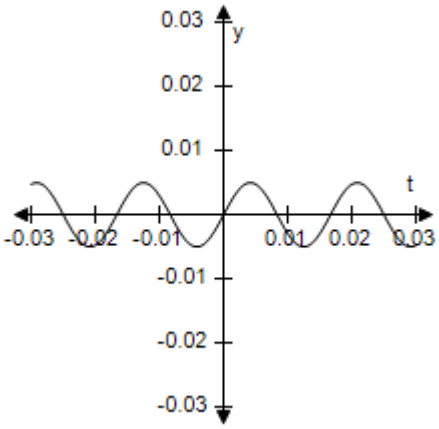
c.



d.



e.



ANSWER: d
POINTS: 1
REFERENCES: 6.4.72
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
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27. Write an equation for the function that is described by the given characteristics.

A sine curve with a period of π, an amplitude of 4, a right phase shift of $\frac{\pi}{2}$, and a vertical translation up 7 units.

a. $y = 10 + 4 \sin (2x + \pi)$
b. $y = 7 + 4 \sin (2x - \pi)$
c. $y = 9 - 4 \sin (2x + \pi)$
d. $y = 8 + 4 \sin (-2x - \pi)$
e. $y = 11 + 7 \sin (2x - \pi)$

ANSWER: b
POINTS: 1
REFERENCES: 6.4.83
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 11/27/2014 10:14 AM

28. Write an equation for the function that is described by the given characteristics.

A sine curve with a period of 4π, an amplitude of 4, a left phase shift of $\frac{\pi}{4}$, and a vertical translation down 5 units.

a. $y = 4 \sin \left[x + \frac{\pi}{8}\right] - 5$

b. $y = 4 \sin \left[\frac{x}{2} + \frac{\pi}{8}\right] + 5$

c. $y = 4 \sin \left[\frac{x}{2} + \frac{\pi}{8}\right] - 5$

d. $y = 4 \sin \left[\frac{x}{2} + \pi\right] - 5$

e. $y = 5 \sin \left[\frac{x}{2} + \frac{\pi}{8}\right] - 4$

ANSWER: c
POINTS: 1
REFERENCES: 6.4.84
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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Section 1.5 - Graphs of Sine and Cosine Functions

DATE MODIFIED: 11/27/2014 10:19 AM

29. Write an equation for the function that is described by the given characteristics.

A cosine curve with a period of π, an amplitude of 6, a left phase shift of π, and a vertical translation down $\frac{4}{3}$ units.

a. $y = 6\cos(2x + \pi) - \frac{4}{3}$

b. $y = 6\cos(2x + 2\pi) - \frac{4}{3}$

c. $y = 6\cos(2x + 2\pi) + \frac{4}{3}$

d. $y = 6\cos(x + 2\pi) - \frac{4}{3}$

e. $y = 6\cos(x + \pi) - \frac{4}{3}$

ANSWER: b
POINTS: 1
REFERENCES: 6.4.85
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 11/27/2014 10:26 AM

30. Write an equation for the function that is described by the given characteristics.

A cosine curve with a period of 4π, an amplitude of 7, a right phase shift of $\frac{\pi}{2}$, and a vertical translation up 2 units.

a. $y = 2 + 7\cos\left(\frac{x}{2} - \frac{\pi}{4}\right)$

b. $y = 2 + 7\cos\left(\frac{x}{2} + \pi\right)$

c. $y = 2 - 7\cos\left(\frac{x}{2} - \frac{\pi}{4}\right)$

d. $y = 2 + 7\cos\left(\frac{x}{2} - \pi\right)$

e. $y = 2 + 7\cos(x - \pi)$

ANSWER: a

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Section 1.5 - Graphs of Sine and Cosine Functions

POINTS: 1
REFERENCES: 6.4.86
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 11/27/2014 10:39 AM

31. For a person at rest, the velocity v (in liters per second) of airflow during a respiratory cycle (the time from the beginning of one breath to the beginning of the next) is given by

$$v = 0.85 \sin\left(\frac{\pi t}{3}\right),$$

where t is the time (in seconds).
(Inhalation occurs when $v > 0$, and exhalation occurs when $v < 0$.)

Find the time for one full respiratory cycle.

a. 7 sec
b. 9 sec
c. 3 sec
d. 8 sec
e. 6 sec

ANSWER: e
POINTS: 1
REFERENCES: 6.4.87a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 11/27/2014 10:43 AM

32. For a person at rest, the velocity v (in liters per second) of airflow during a respiratory cycle (the time from the beginning of one breath to the beginning of the next) is given by

$$v = 0.85 \sin\left(\frac{\pi t}{3}\right),$$

where t is the time (in seconds).
(Inhalation occurs when $v > 0$ and exhalation occurs when $v < 0$.)

Find the number of cycles per minute.

a. 14 cycles/min
b. 11 cycles/min

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c. 10 cycles/min
d. 15 cycles/min
e. 12 cycles/min

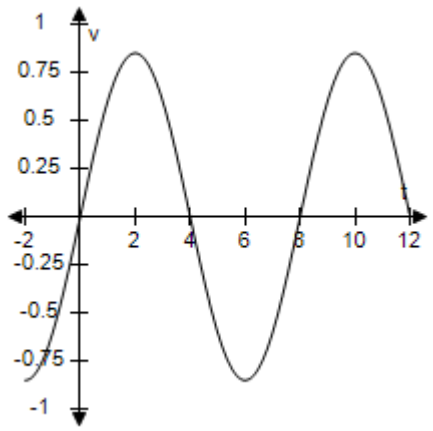
ANSWER: c
POINTS: 1
REFERENCES: 6.4.87b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 11/27/2014 10:50 AM

33. For a person at rest, the velocity v (in liters per second) of airflow during a respiratory cycle (the time from the beginning of one breath to the beginning of the next) is given by

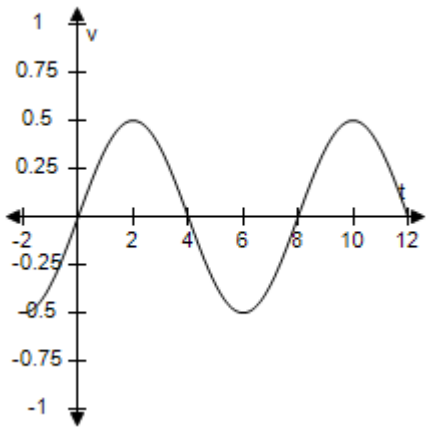
$$v = 0.85 \sin\left(\frac{\pi t}{4}\right),$$

where t is the time (in seconds).
(Inhalation occurs when $v > 0$ and exhalation occurs when $v < 0$.)
Select the graph of this velocity function.

a.



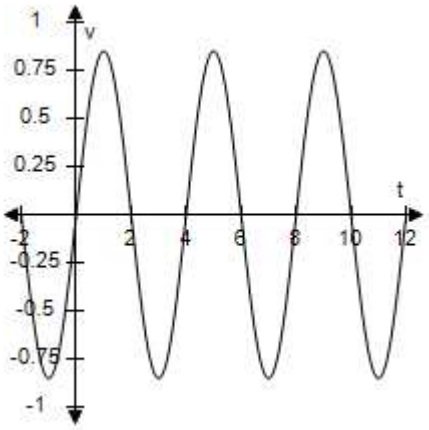
b.



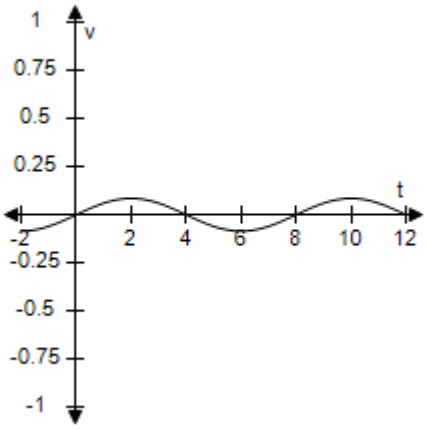
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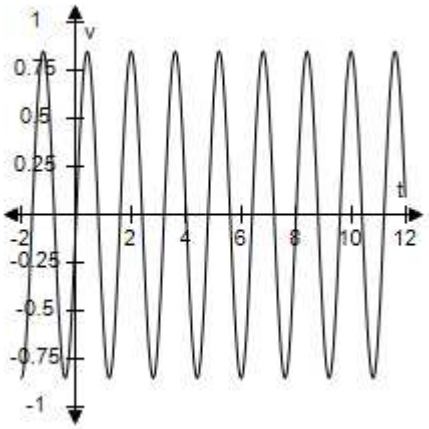
c.



d.



e.



ANSWER: a
POINTS: 1
REFERENCES: 6.4.87c
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 11/28/2014 10:27 AM

34. After exercising for a few minutes, a person has a respiratory cycle for which the velocity of airflow is approximated by

$$v = 1.75 \sin\left(\frac{\pi t}{3}\right),$$

where t is the time (in seconds).
(Inhalation occurs when $v > 0$ and exhalation occurs when $v < 0$.)

Find the time for one full respiratory cycle.

a. 6 sec

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b. 2 sec
c. 7 sec
d. 3 sec
e. 8 sec

ANSWER: a
POINTS: 1
REFERENCES: 6.4.88a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 5/15/2015 9:12 AM

35. After exercising for a few minutes, a person has a respiratory cycle for which the velocity of airflow is approximated by

$$v = 1.75 \sin\left(\frac{\pi t}{3}\right),$$

where t is the time (in seconds).
(Inhalation occurs when $v > 0$ and exhalation occurs when $v < 0$.)

Find the number of cycles per minute.

a. 12 cycles/min
b. 10 cycles/min
c. 15 cycles/min
d. 13 cycles/min
e. 11 cycles/min

ANSWER: b
POINTS: 1
REFERENCES: 6.4.88b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
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36. After exercising for a few minutes, a person has a respiratory cycle for which the velocity of airflow is approximated by

$$v = 1.75 \sin\left(\frac{\pi t}{4}\right),$$

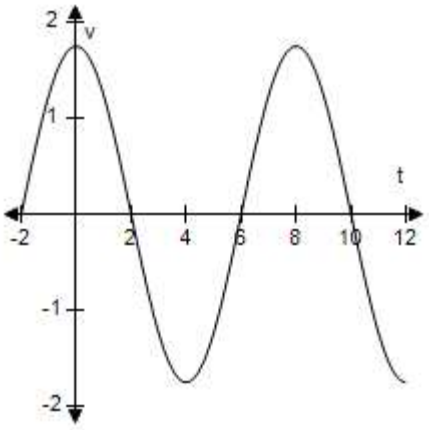
where t is the time (in seconds).

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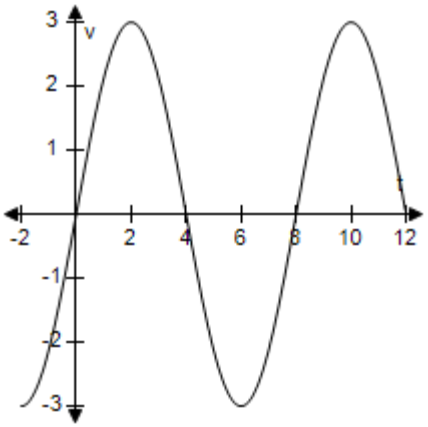
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(Inhalation occurs when $v > 0$ and exhalation occurs when $v < 0$.)
Select the graph of this velocity function.

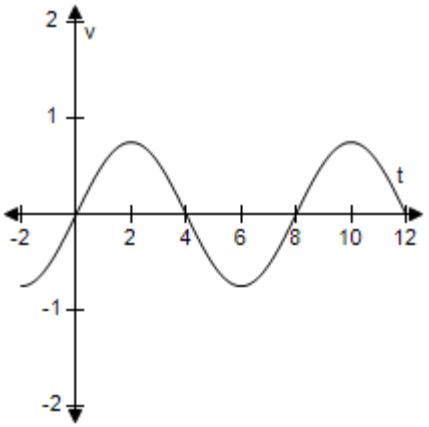
a.



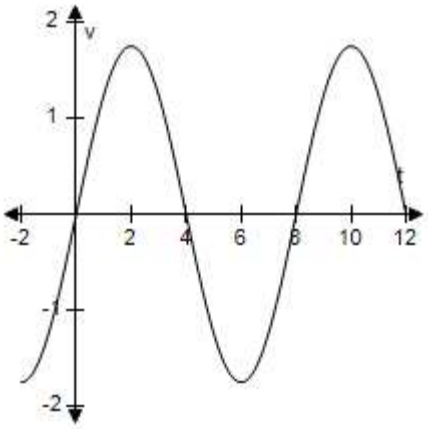
b.



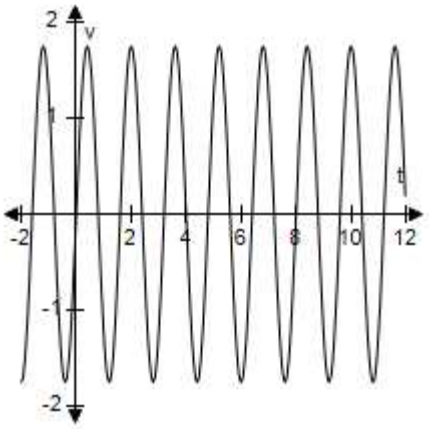
c.



d.



e.



ANSWER: d
POINTS: 1
REFERENCES: 6.4.88c
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic

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Section 1.5 - Graphs of Sine and Cosine Functions

DATE CREATED: 6/10/2014 4:23 PM
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37. When tuning a piano, a technician strikes a tuning fork for the A above middle C and sets up a wave motion that can be approximated by

$y = 0.001 \sin 880\pi t$,

where t is the time (in seconds).

What is the period of the function?

a. $\frac{1}{880}$ sec

b. 440 sec

c. $\frac{1}{440}$ sec

d. 880 sec

e. 88 sec

ANSWER: c
POINTS: 1
REFERENCES: 6.4.91a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 5/15/2015 9:33 AM

38. When tuning a piano, a technician strikes a tuning fork for the A above middle C and sets up a wave motion that can be approximated by

$y = 0.001 \sin 850\pi t$,

where t is the time (in seconds).

The frequency is given by $f = 1 / p$. What is the frequency of the note?

a. 85 cycles/sec

b. $\frac{1}{425}$ cycles/sec

c. $\frac{1}{850}$ cycles/sec

d. 850 cycles/sec

e. 425 cycles/sec

ANSWER: e
POINTS: 1
REFERENCES: 6.4.91b

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Section 1.5 - Graphs of Sine and Cosine Functions

QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
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39. The daily consumption C (in gallons) of diesel fuel on a farm is modeled by

$$C = 30.8 + 21.6 \sin\left(\frac{2\pi t}{365} + 10.9\right),$$

where t is the time (in days), with $t = 1$ corresponding to January 1.
What is the period of the model?

a. 31 days
b. 22 days
c. 183 days
d. 365 days
e. 30 days

ANSWER: d
POINTS: 1
REFERENCES: 6.4.93a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
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40. The daily consumption C (in gallons) of diesel fuel on a farm is modeled by

$$C = 30.4 + 21.6 \sin\left(\frac{2\pi t}{365} + 10.2\right),$$

where t is the time (in days), with $t = 1$ corresponding to January 1.
What is the average daily fuel consumption?

a. 365 gal.
b. 21.6 gal.
c. 30 gal.
d. 10.2 gal.
e. 30.4 gal.

ANSWER: e
POINTS: 1
REFERENCES: 6.4.93b
QUESTION TYPE: Multi-Mode (Multiple choice)

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Section 1.5 - Graphs of Sine and Cosine Functions

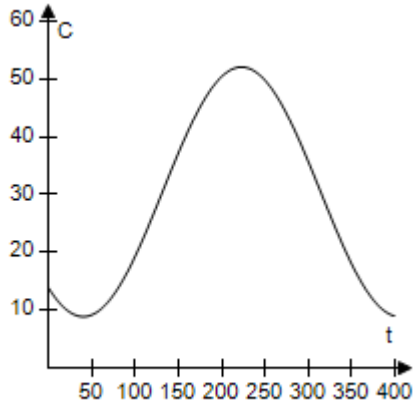
HAS VARIABLES: True
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41. The daily consumption C (in gallons) of diesel fuel on a farm is modeled by

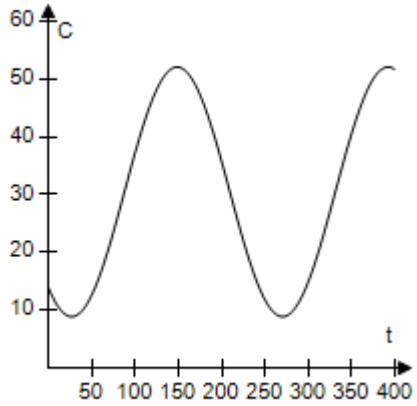
$$C = 30.5 + 21.6 \sin\left(\frac{2\pi t}{365} + 10.3\right),$$

where t is the time (in days), with $t = 1$ corresponding to January 1.
Use a graphing utility to select the graph of the model.

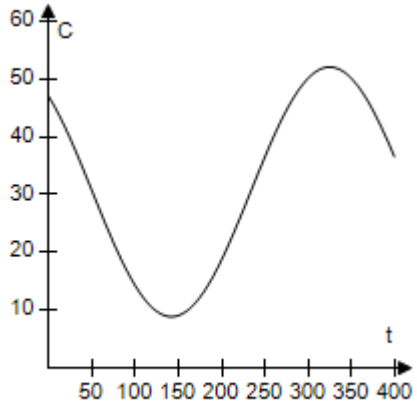
a.



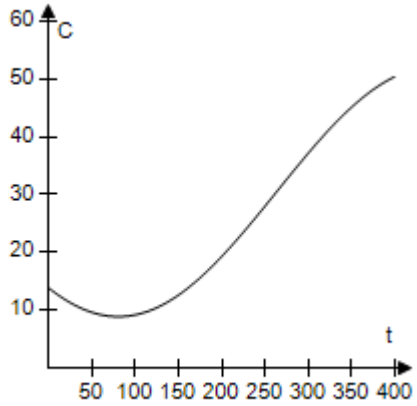
b.



c.



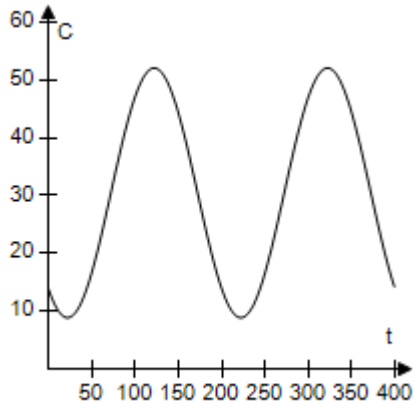
d.



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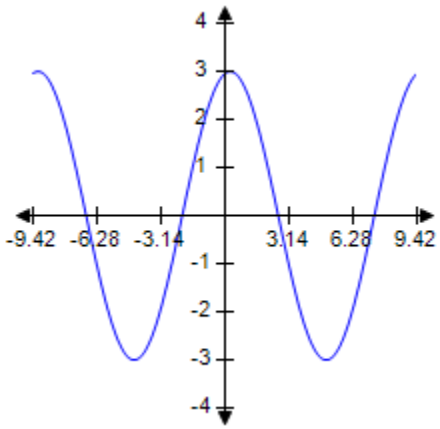
e.



ANSWER: a
POINTS: 1
REFERENCES: 6.4.93c
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
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42. Determine the period and amplitude of the following function

$$y = 3\cos\left(\frac{2x}{3} - \frac{1}{6}\right)$$



a. Period: 10π; Amplitude: 6
b. Period: $\frac{\pi}{3}$; Amplitude: 3
c. Period: 8π; Amplitude: 4
d. Period: 3π; Amplitude: 3
e. Period: 5π; Amplitude: 2

ANSWER: d

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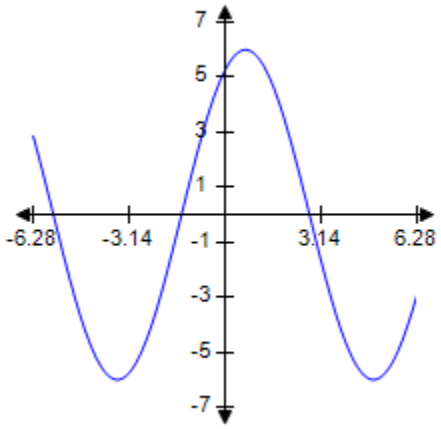
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Section 1.5 - Graphs of Sine and Cosine Functions

POINTS: 1
REFERENCES: 6.4.6
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
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43. Determine the period and amplitude of the following function

$$y = 6\cos\left(\frac{3x}{4} - \frac{1}{2}\right)$$



a. Period: 10π; Amplitude: 12
b. Period: $\frac{8\pi}{3}$; Amplitude: 6
c. Period: 4π; Amplitude: 7
d. Period: $\frac{3\pi}{8}$; Amplitude: 6
e. Period: 5π; Amplitude: 5

ANSWER: b
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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44. Describe the relationship between the graphs of f and g. Consider amplitude, period, and shifts.

$f(x) = \cos x$
$g(x) = \cos(5x) - 3$

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a. The period of $g(x)$ is five times the period of $f(x)$.
Graph of $g(x)$ is shifted upward 3 unit(s) relative to the graph of $f(x)$.

b. The amplitude of $g(x)$ is five times the amplitude of $f(x)$.
Graph of $g(x)$ is shifted downward 3 unit(s) relative to the graph of $f(x)$.

c. The amplitude of $g(x)$ is five times the amplitude of $f(x)$.
Graph of $g(x)$ is shifted upward 3 unit(s) relative to the graph of $f(x)$.

d. The period of $g(x)$ is three times the period of $f(x)$.
Graph of $g(x)$ is shifted downward 5 unit(s) relative to the graph of $f(x)$.

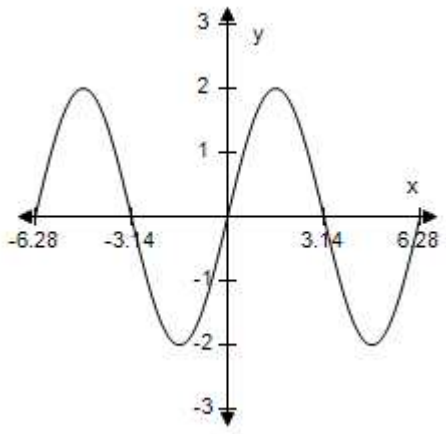
e. The period of $f(x)$ is five times the period of $g(x)$.
Graph of $g(x)$ is shifted downward 3 unit(s) relative to the graph of $f(x)$.

ANSWER: e
POINTS: 1
REFERENCES: 6.4.20
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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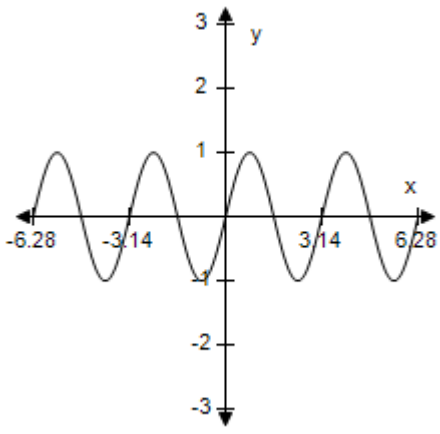
45. Sketch the graph of the function below, being sure to include at least two full periods.

$y = 2\cos(x - \frac{\pi}{2})$

a.



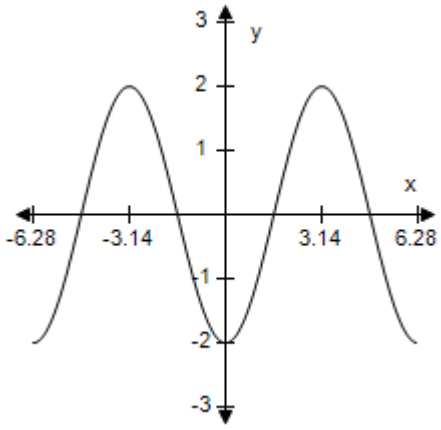
b.



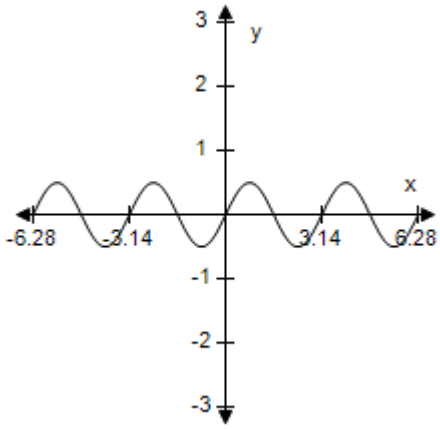
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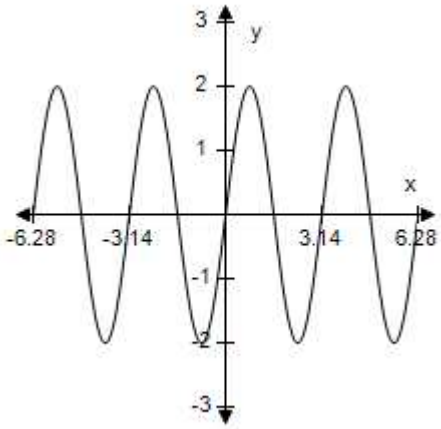
c.



d.



e.



ANSWER: a
POINTS: 1
REFERENCES: 6.4.52
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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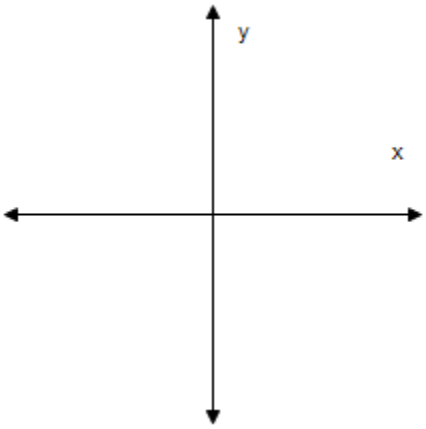
46. Sketch the graph of the function below, being sure to include at least two full periods.

$y = -\cos(x + \frac{\pi}{2})$

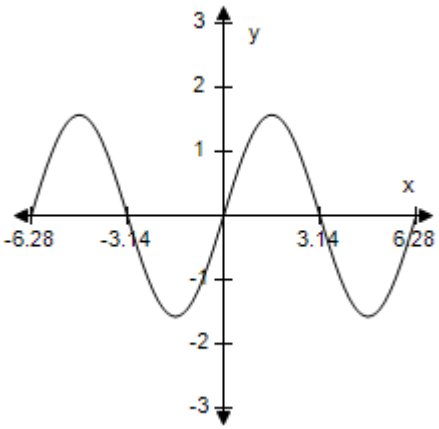
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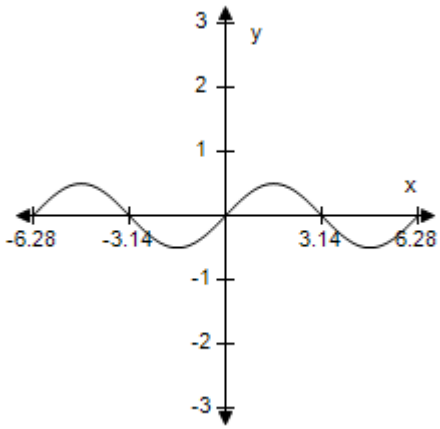
Section 1.5 - Graphs of Sine and Cosine Functions



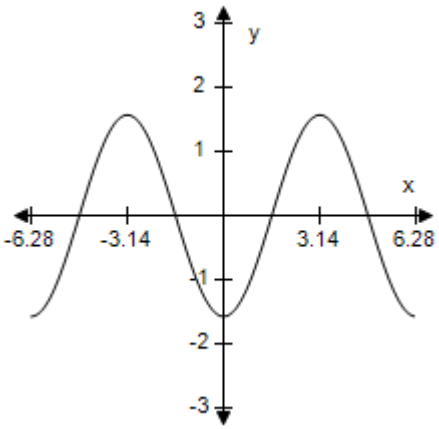
a.



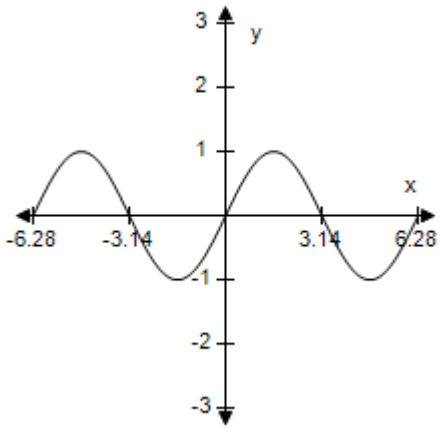
b.



c.



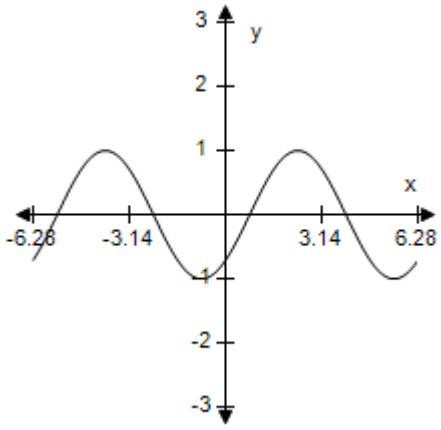
d.



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e.

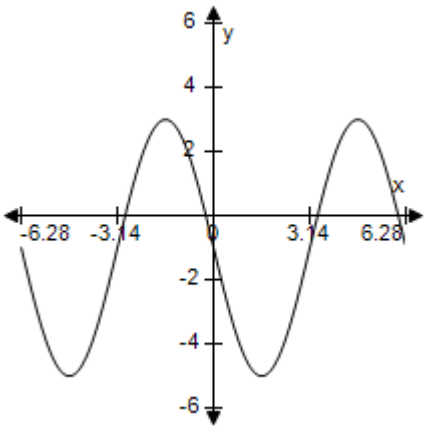


ANSWER: d
POINTS: 1
REFERENCES: 6.4.49
QUESTION TYPE: Multi-Mode (Multiple choice)
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STUDENT ENTRY MODE: Basic
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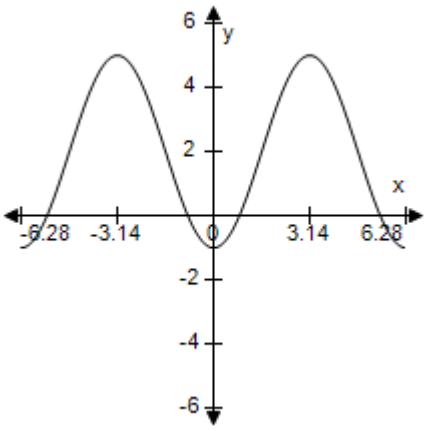
47. Use a graphing utility to graph the function below. Be sure to include at least two full periods.

$y = 4 \sin (x - 5\pi) + 1$

a.



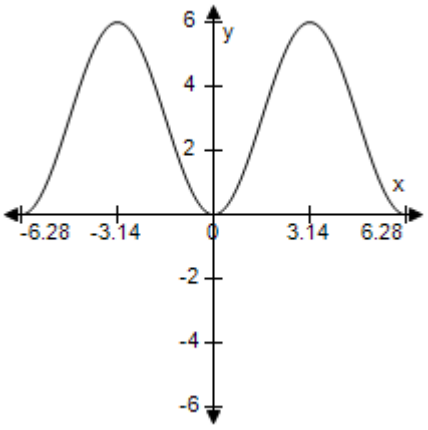
b.



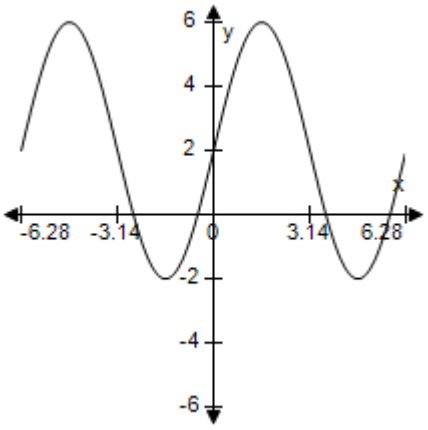
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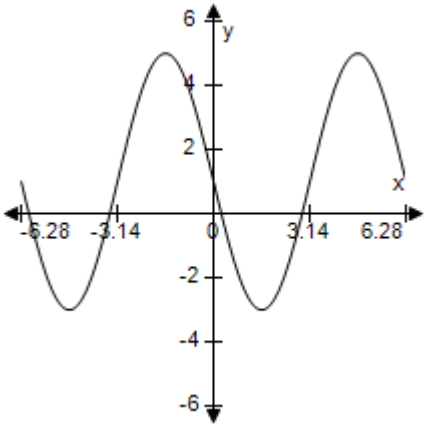
c.



d.



e.



ANSWER: e
POINTS: 1
REFERENCES: 6.4.69
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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48. Use a graphing utility to graph the function below. Be sure to include at least two full periods.

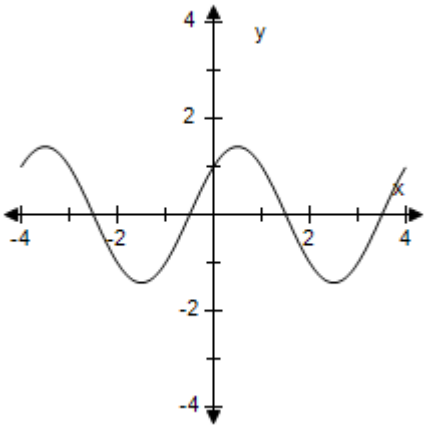
$$y = -\sqrt{2}\sin\left(\frac{\pi x}{2} - \frac{\pi}{4}\right)$$

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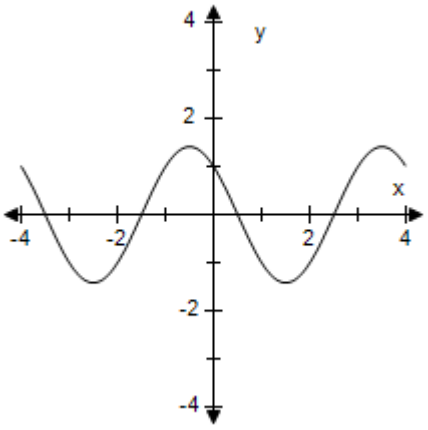
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Section 1.5 - Graphs of Sine and Cosine Functions

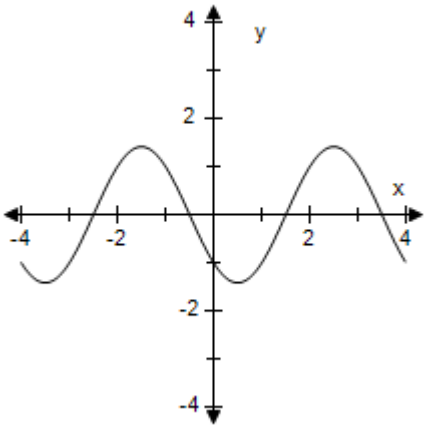
a.



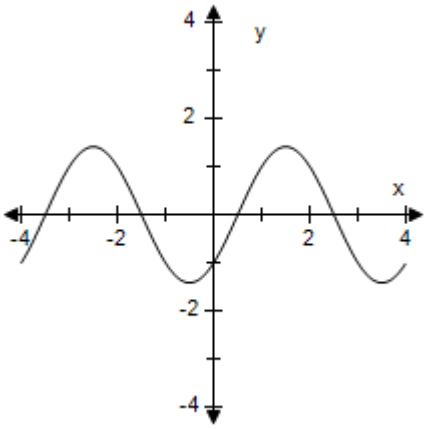
b.



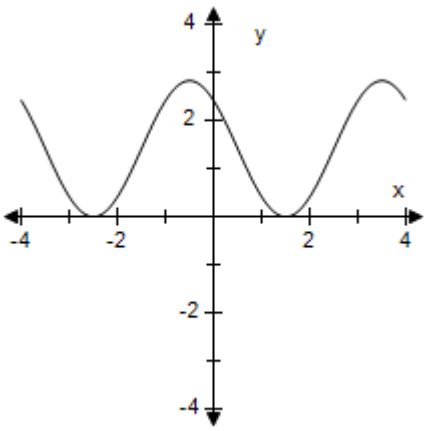
c.



d.



e.



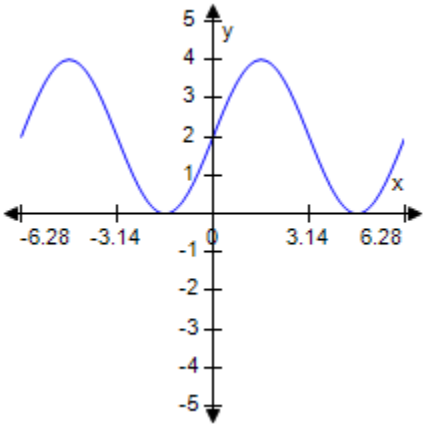
ANSWER: b
POINTS: 1
REFERENCES: 6.4.70
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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Section 1.5 - Graphs of Sine and Cosine Functions

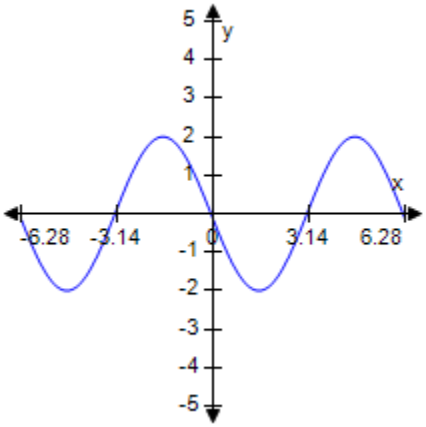
49. Find a and d for the function $f(x) = a \sin x + d$ such that the graph of $f(x)$ matches the graph below.



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

ANSWER: d
POINTS: 1
REFERENCES: 6.4.74
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
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50. Find a, b, and c for the function $f(x) = a \cos (bx - c)$ such that the graph of $f(x)$ matches the graph below.



a. $a = -2$; $b = -1$; $c = -\frac{3}{2}$
b. $a = 4$; $b = 1$; $c = \pi$
c. $a = 1$; $b = 2$; $c = -1$

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d. $a = 2; b = 1; c = -\pi$

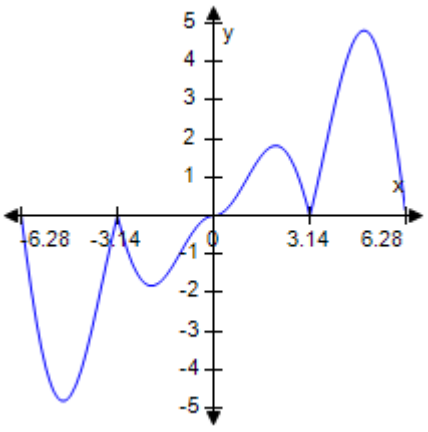
e. $a = 3; b = 1; c = -\frac{1}{2}\pi$

ANSWER: a
POINTS: 1
REFERENCES: 6.4.77
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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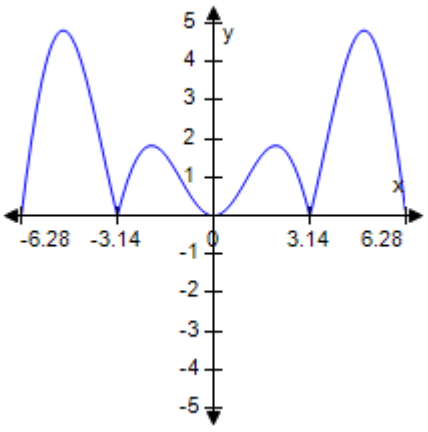
51. Determine which of the graphs below represents the following function

$y=|x|\sin x$

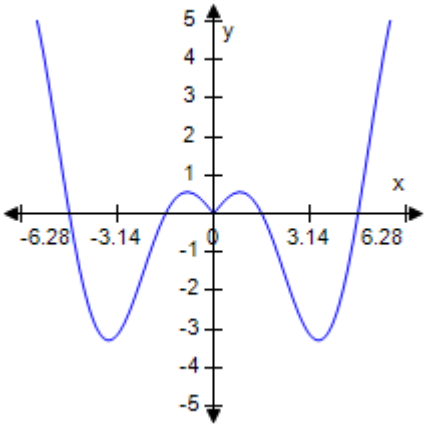
a.



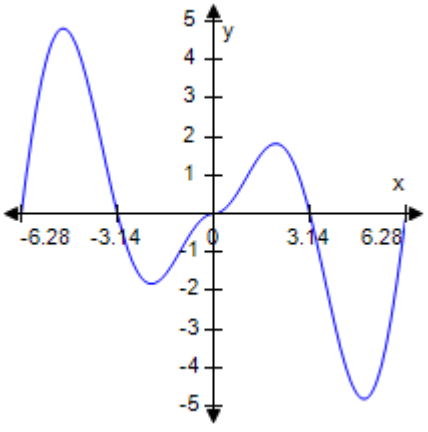
b.



c.



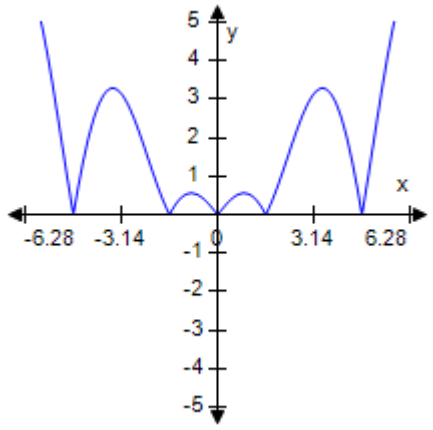
d.



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e.



ANSWER: d
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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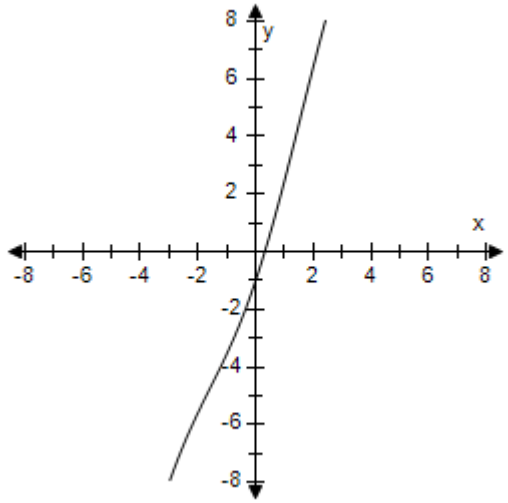
Section 1.6 - Graphs of Other Trigonometric Functions

1. Consider the function given by

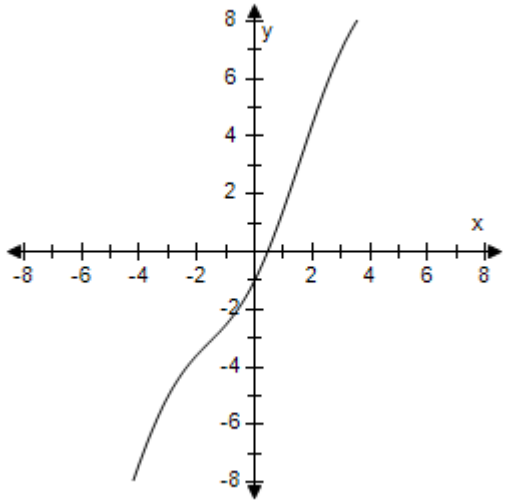
$y = x - \cos x$

Use a graphing utility to select the graph of the function.

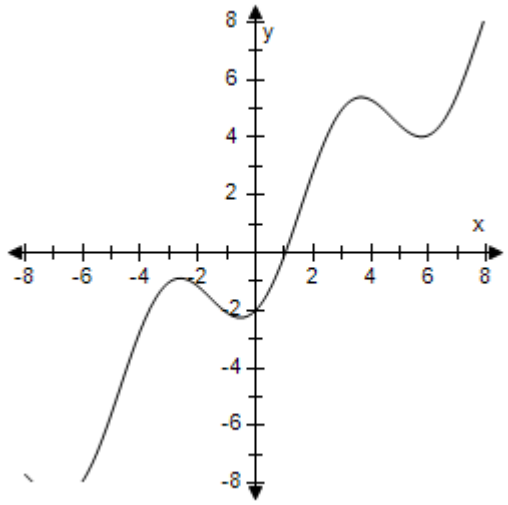
a.



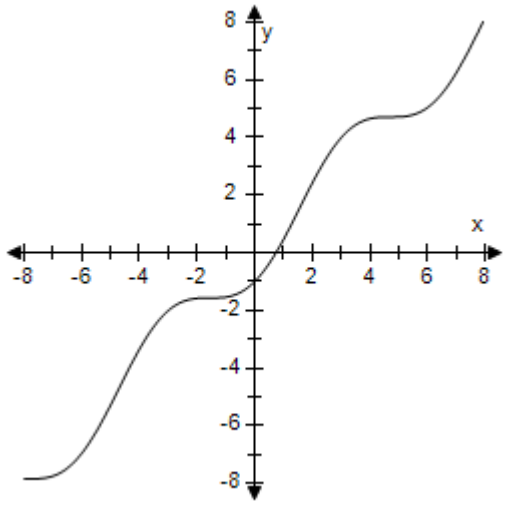
b.



c.



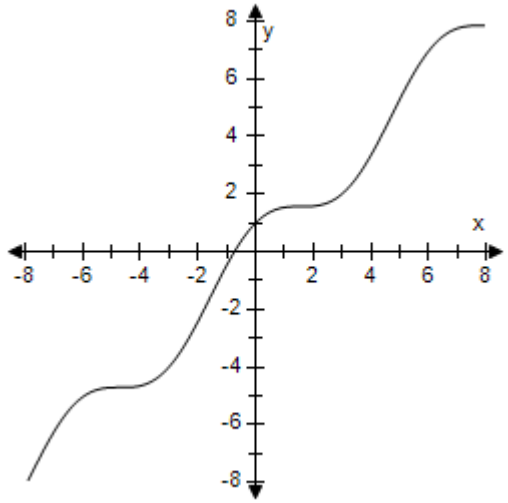
d.



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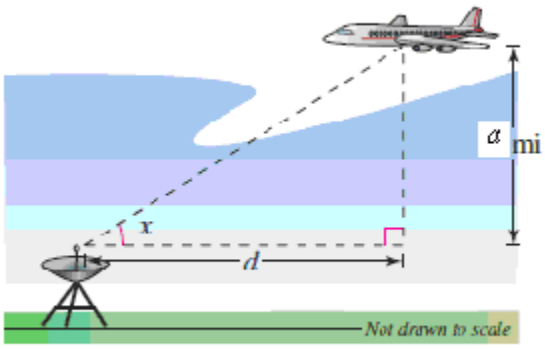
e.



ANSWER: d
POINTS: 1
REFERENCES: 6.5.103a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
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2. A plane flying at an altitude of a miles above a radar antenna will pass directly over the radar antenna (see figure). Let d be the ground distance from the antenna to the point directly under the plane and let x be the angle of elevation to the plane from the antenna. $a = 8$.

(d is positive as the plane approaches the antenna.)
Write d as a function of x.



a. $d = 8 \csc x$
b. $d = 8 \cot x$
c. $d = 8 \cos x$

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d. $d = 8 \tan x$

e. $d = 8 \sin x$

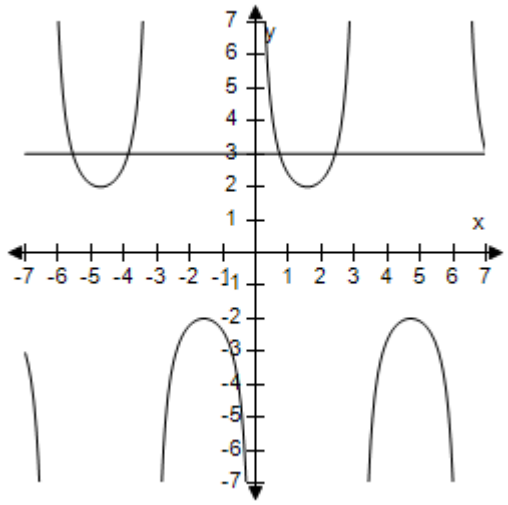
ANSWER: b
POINTS: 1
REFERENCES: 6.5.91
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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3. Use a graphing utility to select the graph of the two equations in the same viewing window. Use the graphs to determine whether the expressions are equivalent.

$y_1 = 2 \sin x \csc x,$

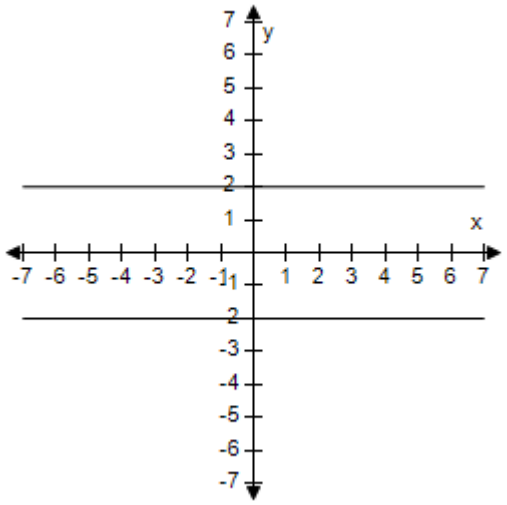
$y_2 = 2$

a.



The expressions are not equivalent.

b.

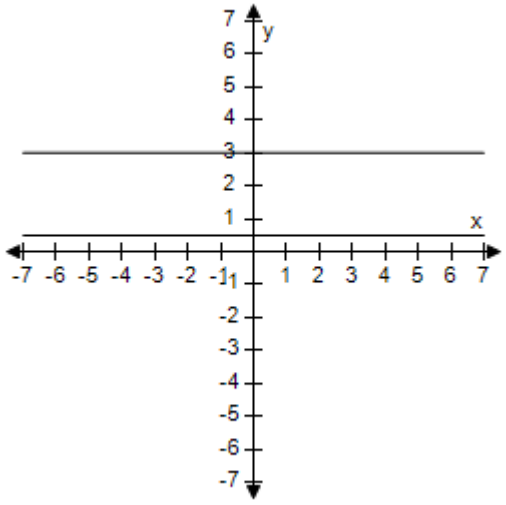


The expressions are equivalent except when $\sin x = 0$, y_1 is undefined.

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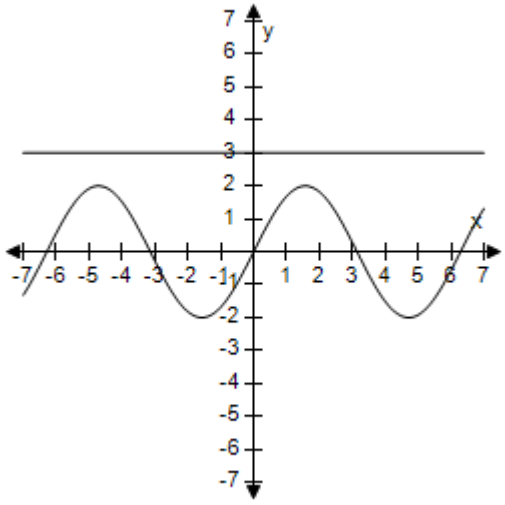
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c.



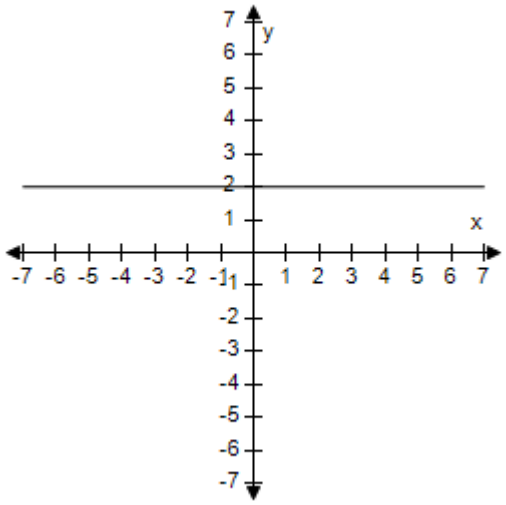
The expressions are equivalent except when $\sin x = 0$, y_1 is undefined.

d.



The expressions are not equivalent.

e.



The expressions are equivalent except when $\sin x = 0$, y_1 is undefined.

ANSWER: e
POINTS: 1
REFERENCES: 6.5.67
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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4. Consider the functions given by

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$f(x) = 2\sin x$
and
$g(x) = \frac{1}{2}\csc x$
on the interval $(0, \pi)$.
Describe the behavior of each of the functions as x approaches π.

a. f approaches 2 and g approaches $+\infty$.
b. f approaches 0 and g approaches $+\infty$.
c. f approaches $+\infty$ and g approaches 0.
d. f approaches 0 and g approaches $\frac{1}{2}$.
e. f approaches 2 and g approaches $\frac{1}{2}$.

ANSWER: b
POINTS: 1
REFERENCES: 6.5.65b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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5. State the period of the function:

$y = \sec 8x$

a. $\frac{\pi}{8}$
b. $\frac{\pi}{4}$
c. $\frac{\pi}{6}$
d. $\frac{\pi}{5}$
e. $\frac{\pi}{7}$

ANSWER: b
POINTS: 1
REFERENCES: 6.5.9
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic

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Section 1.6 - Graphs of Other Trigonometric Functions

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6. State the period of the function:

$y = -\csc 4x$

a. $\frac{\pi}{5}$
b. $\frac{\pi}{2}$
c. $\frac{\pi}{4}$
d. $\frac{\pi}{3}$
e. $\frac{\pi}{6}$

ANSWER: b
POINTS: 1
REFERENCES: 6.5.12
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 5/18/2015 5:08 AM

7. State the period of the function:

$y = \frac{1}{8}\cot \pi x$

a. 7π
b. 5π
c. 6π
d. $\frac{\pi}{2}$
e. 1

ANSWER: e
POINTS: 1
REFERENCES: 6.5.11
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic

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Section 1.6 - Graphs of Other Trigonometric Functions

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8. State the period of the function:

$y = \tan\frac{x}{3}$

a. 5π
b. $\frac{\pi}{2}$
c. 6π
d. 3π
e. 4π

ANSWER: d
POINTS: 1
REFERENCES: 6.5.10
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
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9. State the period of the function:

$y = \frac{1}{2}\sec\frac{\pi x}{5}$

a. 14
b. 10
c. $\frac{\pi}{5}$
d. 10π
e. 12

ANSWER: b
POINTS: 1
REFERENCES: 6.5.13
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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10. State the period of the function:

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Section 1.6 - Graphs of Other Trigonometric Functions

$y = -3\sec\frac{\pi x}{3}$

a. $\frac{\pi}{3}$

b. 6

c. 8

d. 6π

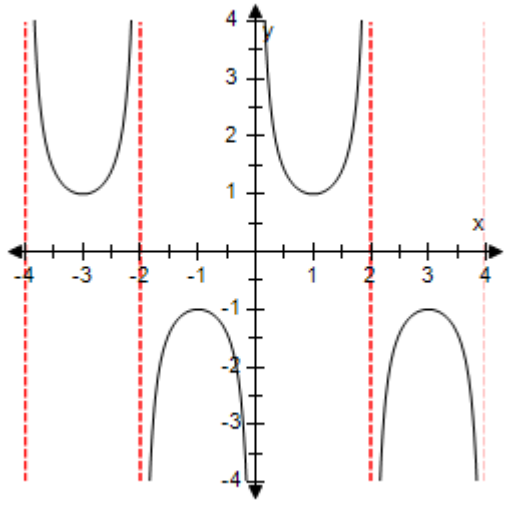
e. 12

ANSWER: b
POINTS: 1
REFERENCES: 6.5.14
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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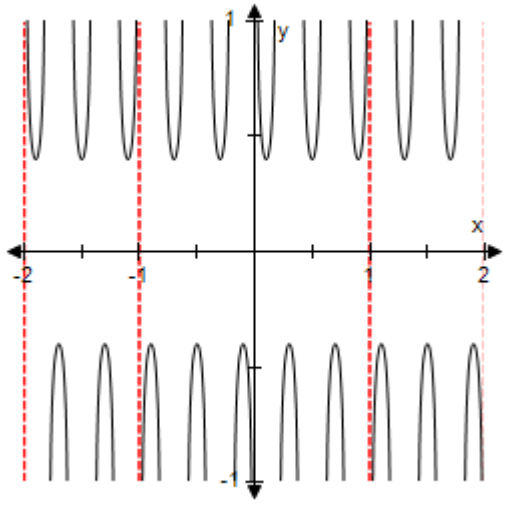
11. Select the graph of the function below. Include two full periods.

$y = 0.4\csc \pi x$

a.



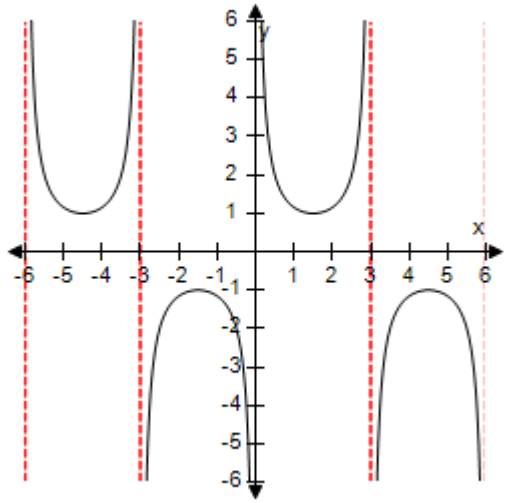
b.



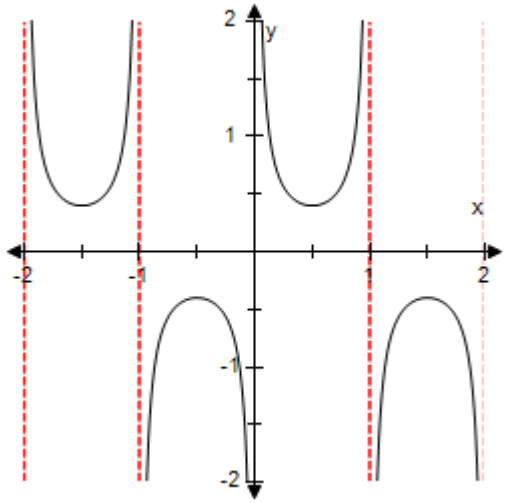
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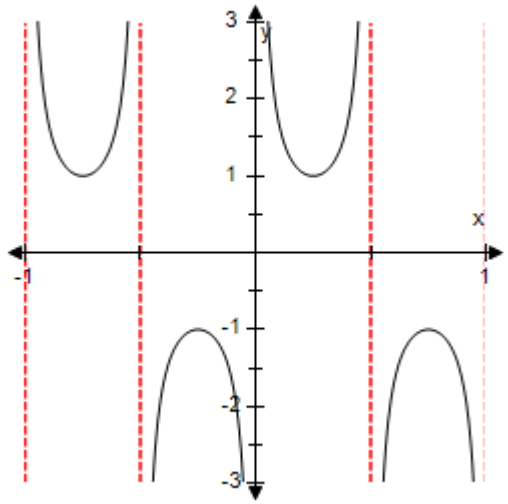
c.



d.



e.



ANSWER: d
POINTS: 1
REFERENCES: 6.5.21
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 5/18/2015 5:22 AM

12. Select the graph of the function below. Include two full periods.

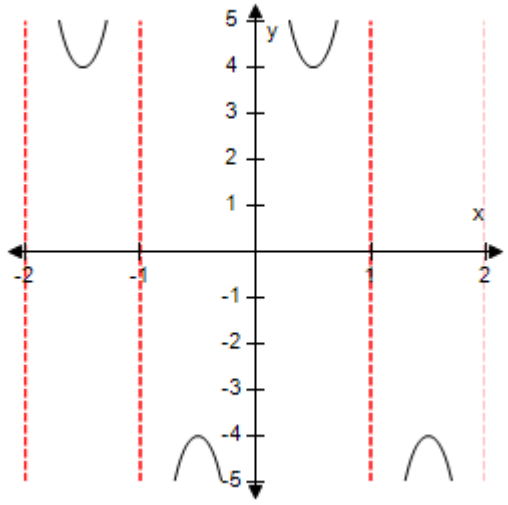
$y = 4\csc \pi x$

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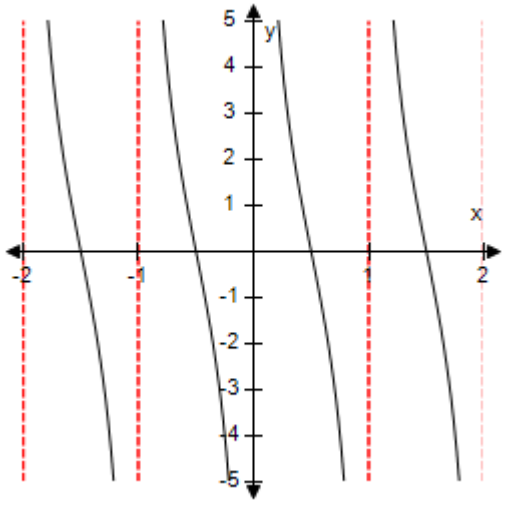
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Section 1.6 - Graphs of Other Trigonometric Functions

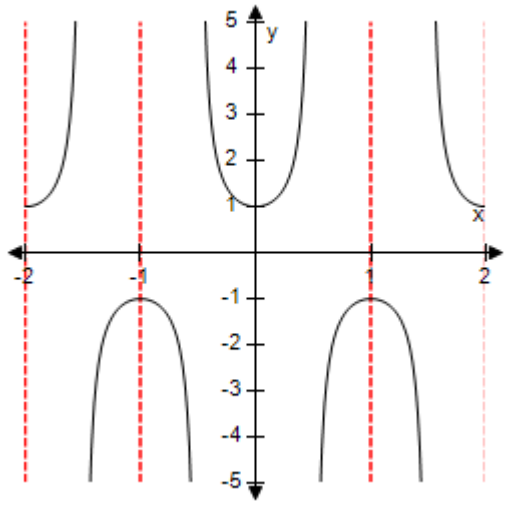
a.



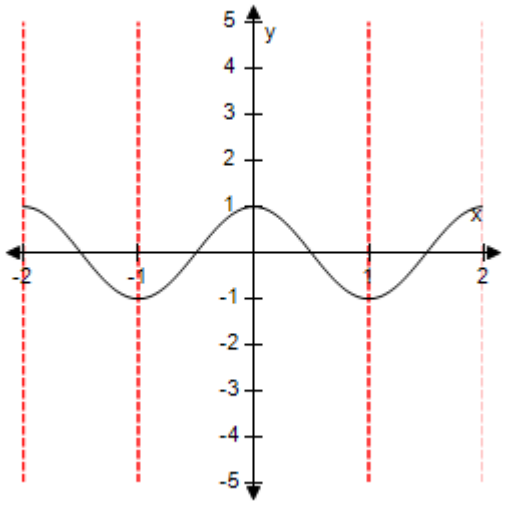
b.



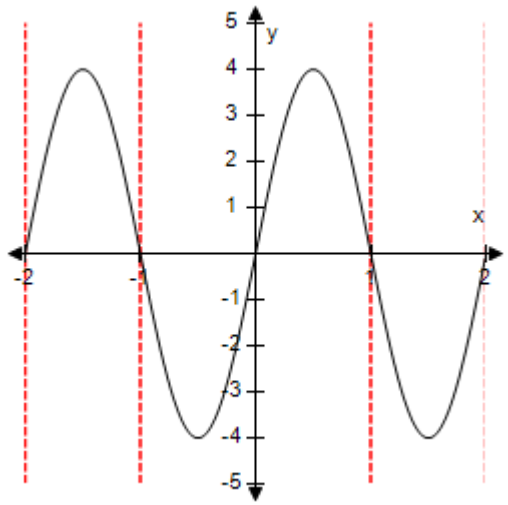
c.



d.



e.



ANSWER: a

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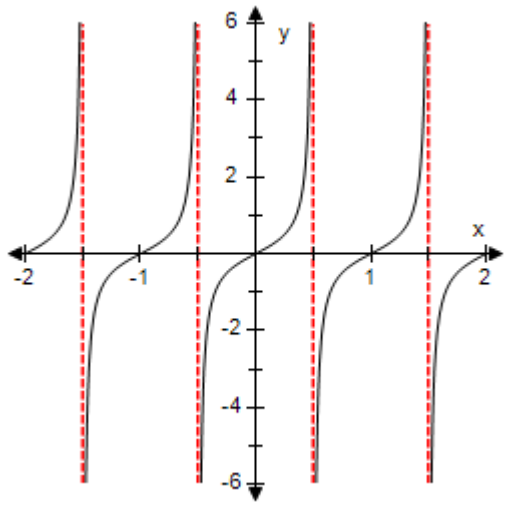
Section 1.6 - Graphs of Other Trigonometric Functions

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DATE MODIFIED:	5/18/2015 5:41 AM

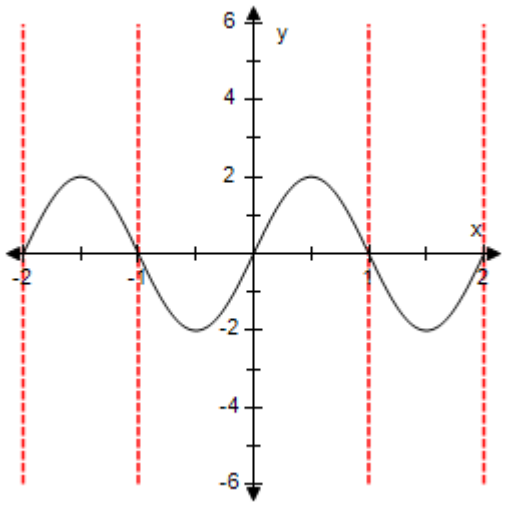
13. Select the graph of the function below. Include two full periods.

$$y = \frac{1}{2}\sec \pi x$$

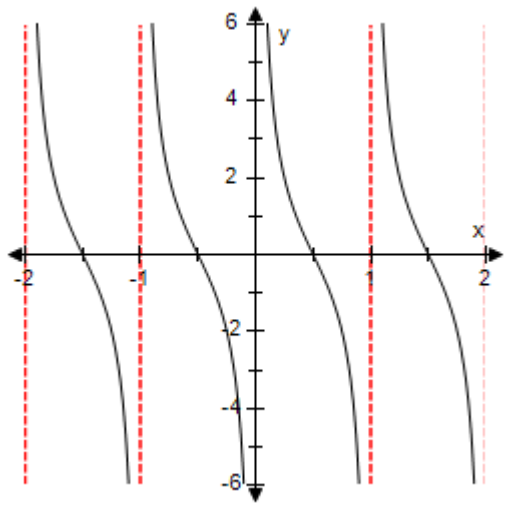
a.



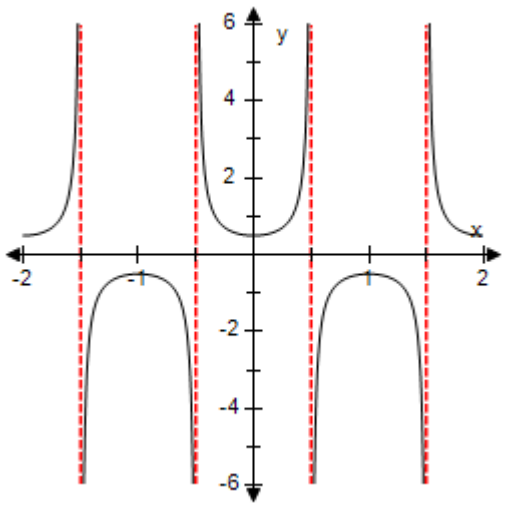
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c.



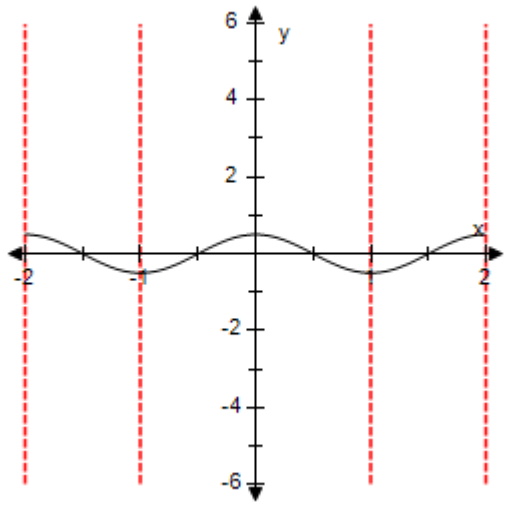
d.



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e.

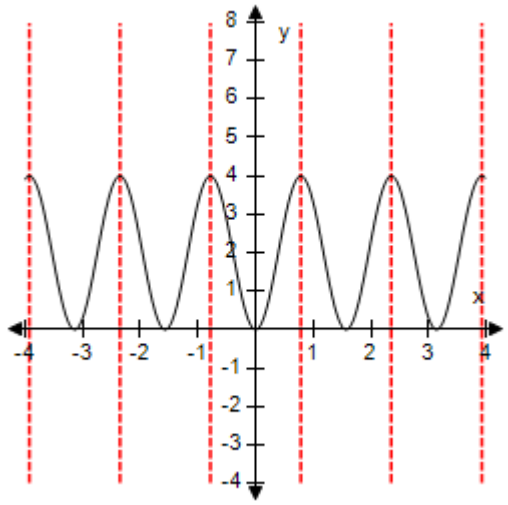


ANSWER: d
POINTS: 1
REFERENCES: 6.5.23
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 6/4/2021 6:43 AM

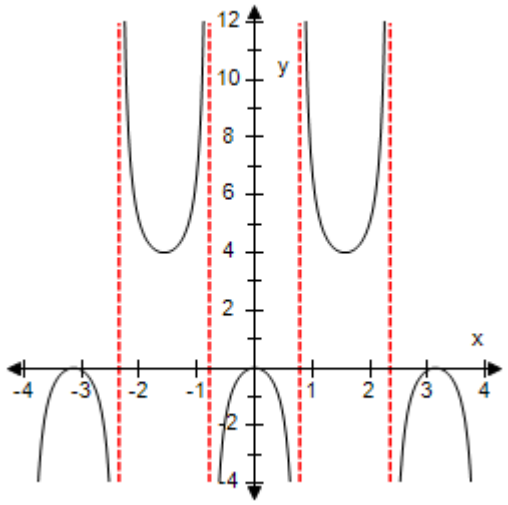
14. Select the graph of the function below. Include two full periods.

$y = -2\sec 2x + 2$

a.



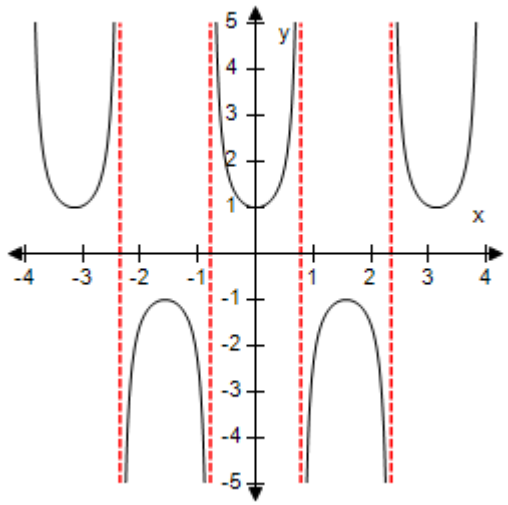
b.



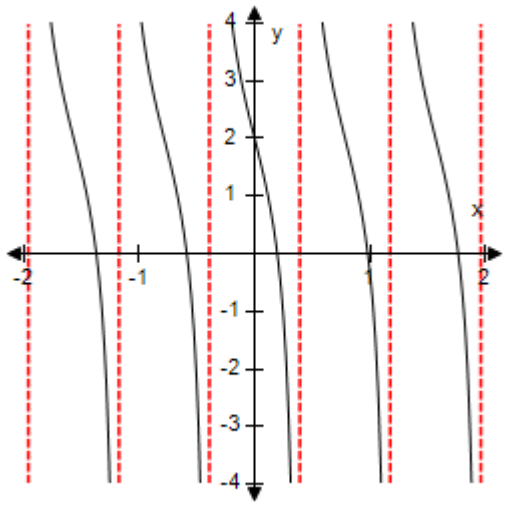
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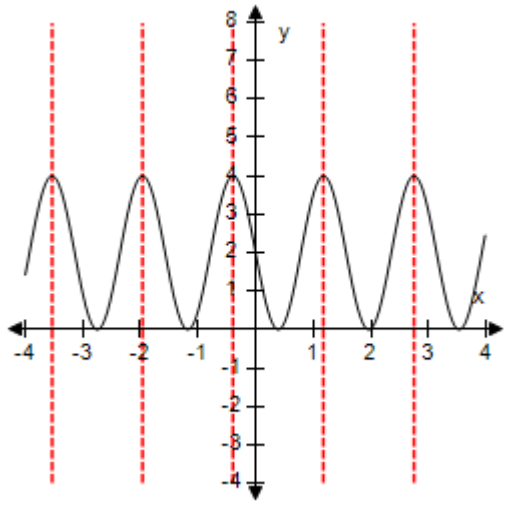
c.



d.



e.



ANSWER: b
POINTS: 1
REFERENCES: 6.5.24
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 5/18/2015 5:36 AM

15. Select the graph of the function below. Include two full periods.

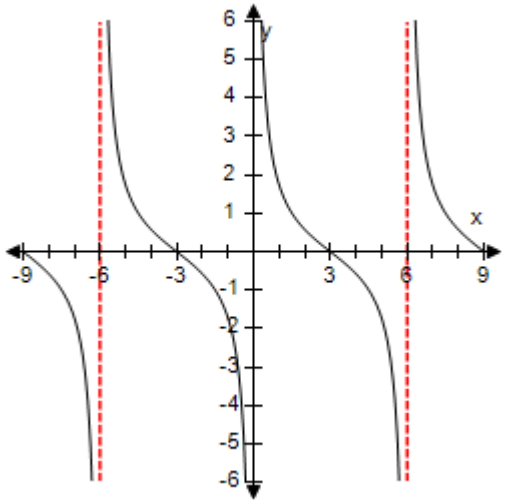
$$y = \tan\frac{\pi x}{6}$$

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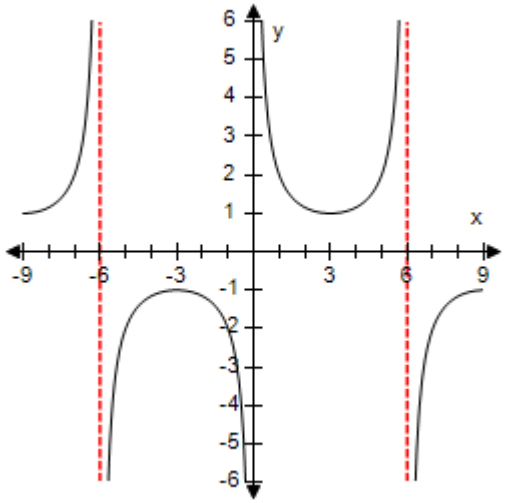
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Section 1.6 - Graphs of Other Trigonometric Functions

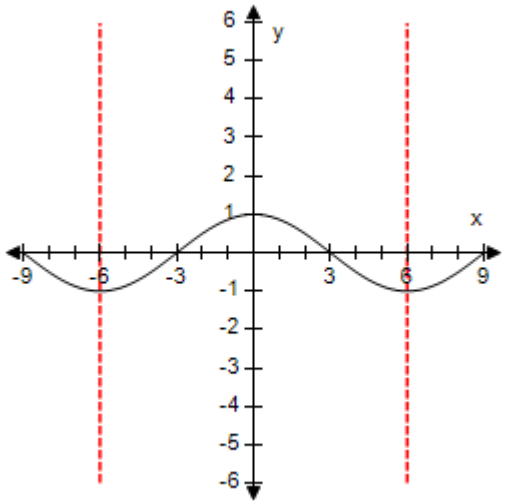
a.



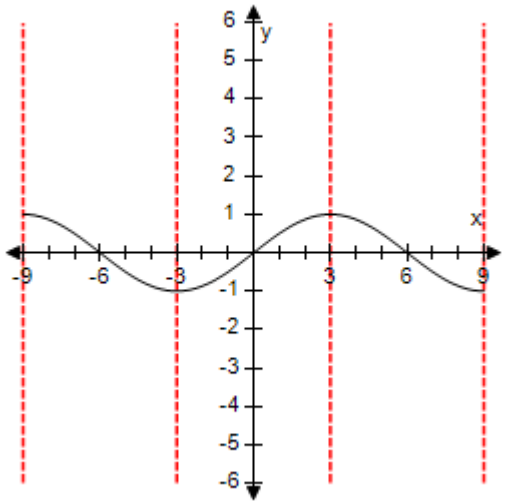
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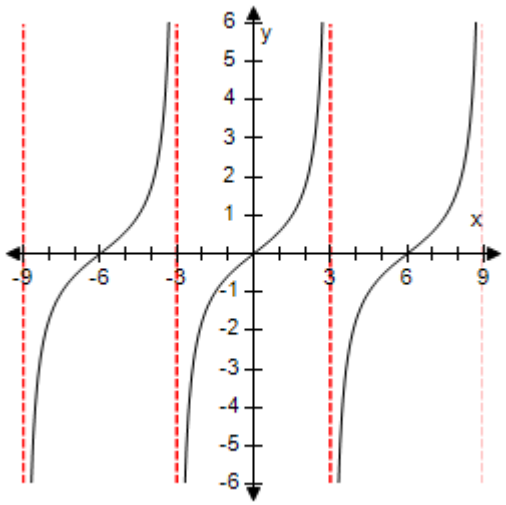
c.



d.



e.



ANSWER: e

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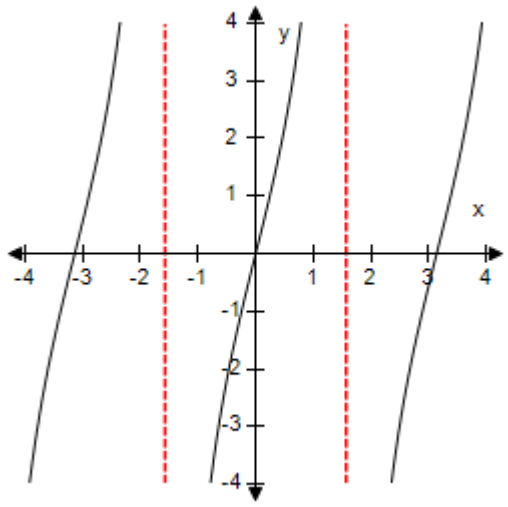
Section 1.6 - Graphs of Other Trigonometric Functions

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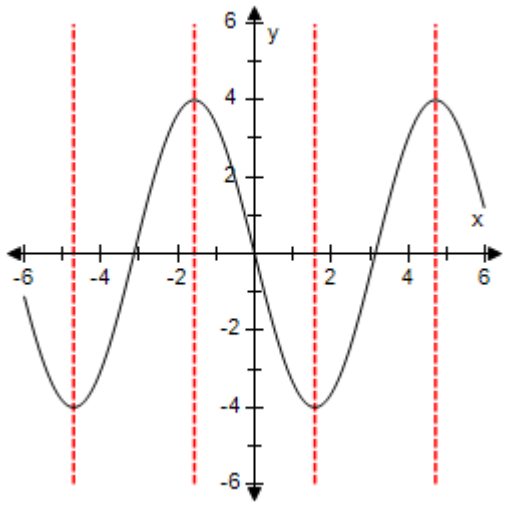
16. Select the graph of the function below. Include two full periods.

$y = 4\tan(x + \pi)$

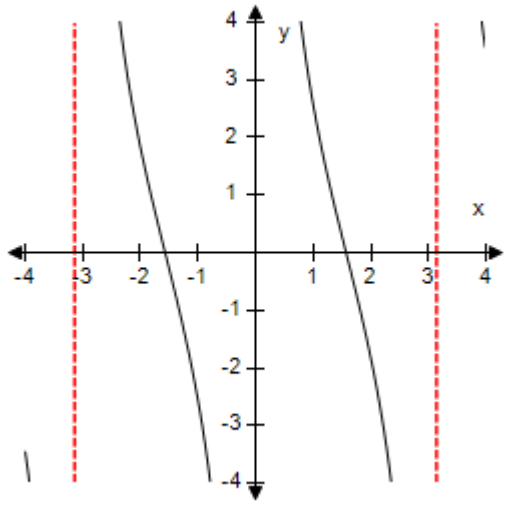
a.



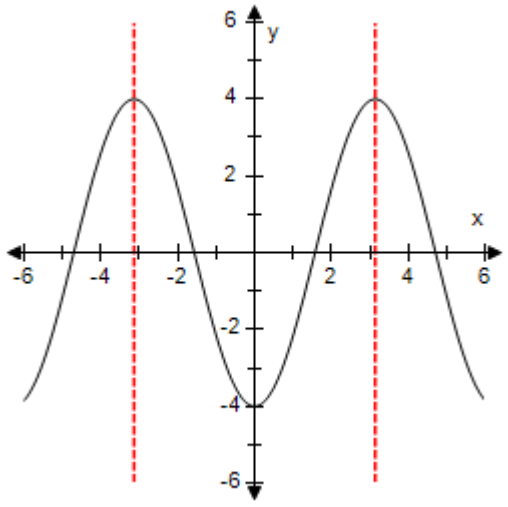
b.



c.



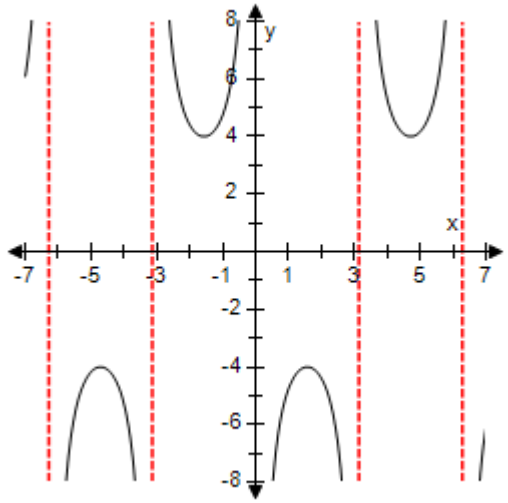
d.



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e.

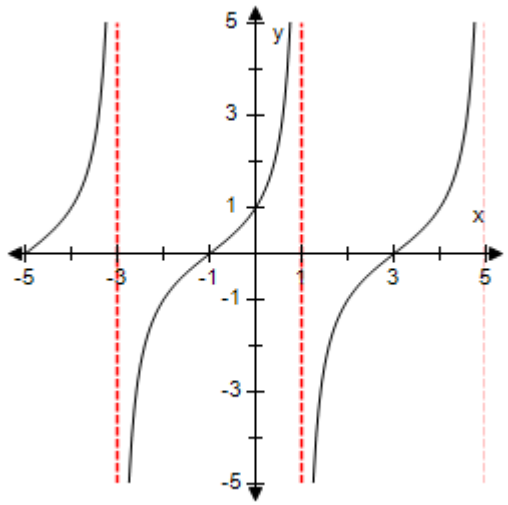


ANSWER: a
POINTS: 1
REFERENCES: 6.5.32
QUESTION TYPE: Multi-Mode (Multiple choice)
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STUDENT ENTRY MODE: Basic
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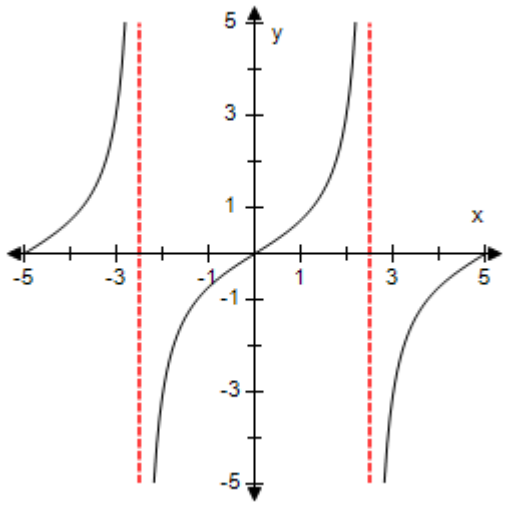
17. Use a graphing utility to select the graph of the function:

$$y = 0.3\tan\left(\frac{\pi x}{4} + \frac{\pi}{4}\right)$$

a.



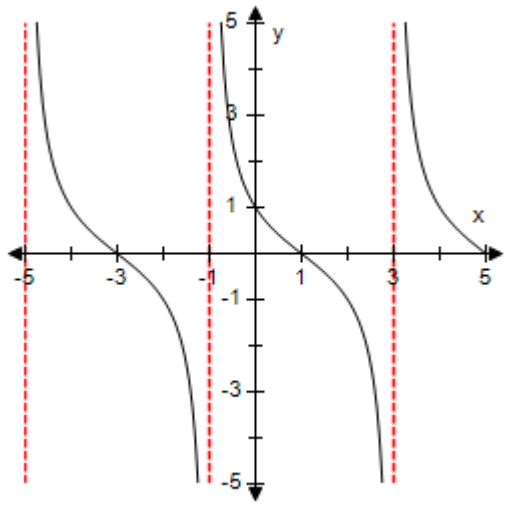
b.



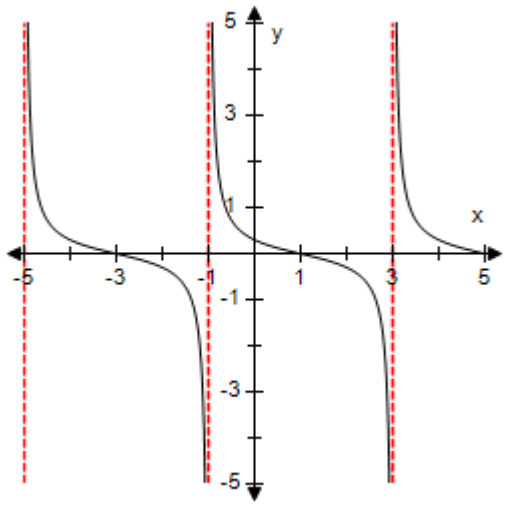
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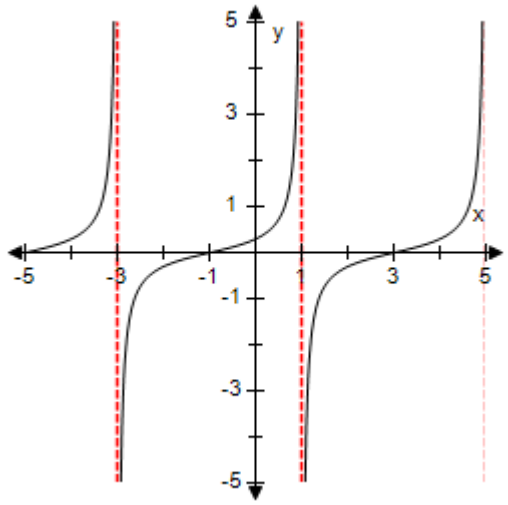
c.



d.



e.



ANSWER: e
POINTS: 1
REFERENCES: 6.5.47
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 5/18/2015 5:46 AM

18. Use a graphing utility to select the graph of the function:

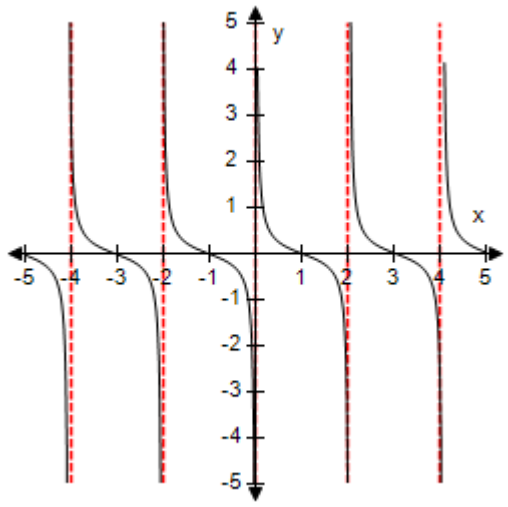
$$y = \frac{1}{4}\sec\left(\frac{\pi x}{2} + \frac{\pi}{2}\right)$$

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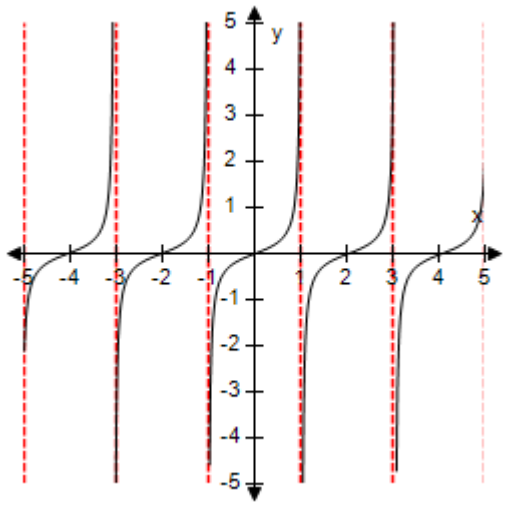
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Section 1.6 - Graphs of Other Trigonometric Functions

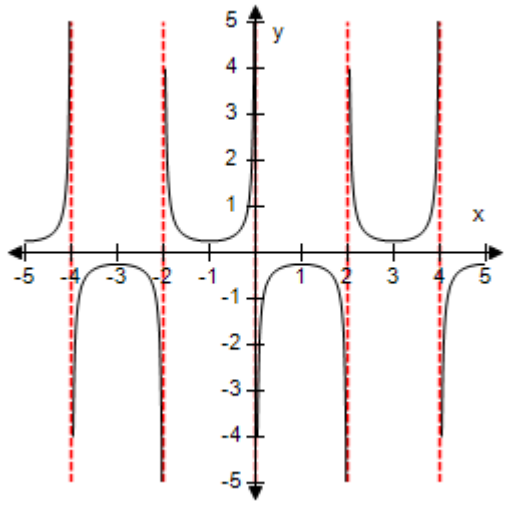
a.



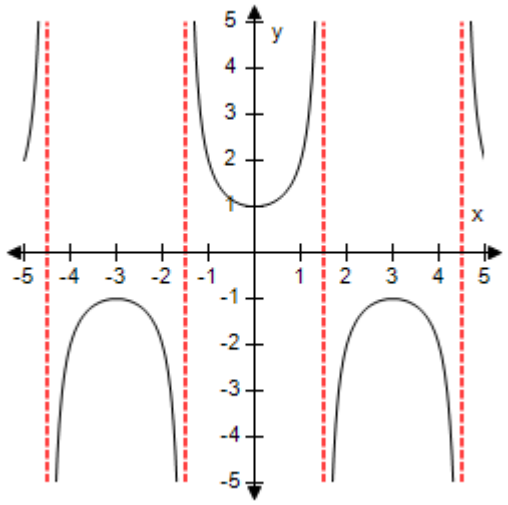
b.



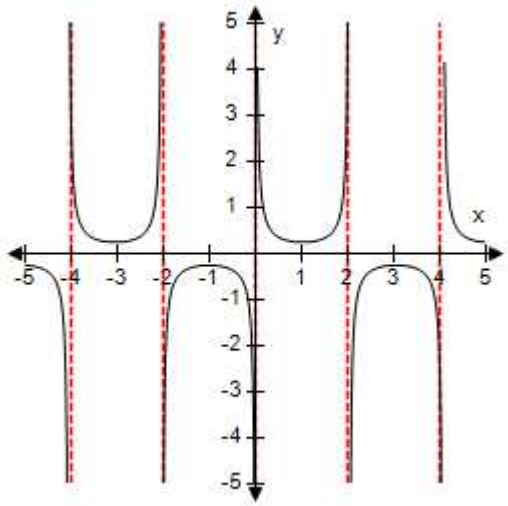
c.



d.



e.



ANSWER: c

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POINTS: 1
REFERENCES: 6.5.48
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 5/18/2015 5:48 AM

19. Determine whether the function below is even, odd, or neither.

$f(x) = 3\sec x$

a. Neither
b. Odd
c. Even

ANSWER: c
POINTS: 1
REFERENCES: 6.5.57
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 5/18/2015 5:49 AM

20. Determine whether the function below is even, odd, or neither.

$y = \frac{1}{7}\tan x$

a. Even
b. Odd
c. Neither

ANSWER: b
POINTS: 1
REFERENCES: 6.5.58
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
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21. Determine whether the function below is even, odd, or neither.

$f(x) = 0.8 \cot x$

a. Neither

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b. Even
c. Odd

ANSWER: c
POINTS: 1
REFERENCES: 6.5.59
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 5/18/2015 5:50 AM

22. Determine whether the function below is even, odd, or neither.

$$f(x) = 4\csc\frac{x}{4}$$

a. Even
b. Odd
c. Neither

ANSWER: b
POINTS: 1
REFERENCES: 6.5.60
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 5/18/2015 5:50 AM

23. Determine whether the function below is even, odd, or neither.

$$f(x) = \frac{x}{4} + \tan(x)$$

a. Neither
b. Even
c. Odd

ANSWER: c
POINTS: 1
REFERENCES: 6.5.61
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: False
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 5/18/2015 5:51 AM

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Section 1.6 - Graphs of Other Trigonometric Functions

24. Determine whether the function below is even, odd, or neither.

$$f(x) = \frac{x^2}{3} - 3\sec x$$

a. Even
b. Odd
c. Neither

ANSWER: a
POINTS: 1
REFERENCES: 6.5.62
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 5/18/2015 5:51 AM

25. Determine whether the function below is even, odd, or neither.

$$f(x) = x^3 \csc\frac{x}{5}$$

a. Neither
b. Odd
c. Even

ANSWER: c
POINTS: 1
REFERENCES: 6.5.63
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 5/18/2015 5:53 AM

26. Determine whether the function below is even, odd, or neither.

$$f(x) = x^8 \cot\frac{x}{2}$$

a. Neither
b. Odd
c. Even

ANSWER: b
POINTS: 1
REFERENCES: 6.5.64
QUESTION TYPE: Multi-Mode (Multiple choice)

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Section 1.6 - Graphs of Other Trigonometric Functions

HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 5/18/2015 5:55 AM

27. Describe the behavior of the function below as x approaches zero.

$f(x) = |5x\cos x|$

a. $f \to +\infty$ as $x \to 0$.
b. $f \to 1$ as $x \to 0$.
c. $f \to 0$ as $x \to 0$.
d. $f \to -1$ as $x \to 0$.
e. $f \to -\infty$ as $x \to 0$.

ANSWER: c
POINTS: 1
REFERENCES: 6.5.73
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 5/18/2015 5:55 AM

28. Describe the behavior of the function below as x approaches zero.

$f(x) = x\sin x$

a. $f \to 0$ as $x \to 0$.
b. $f \to -1$ as $x \to 0$.
c. $f \to 1$ as $x \to 0$.
d. $f \to -\infty$ as $x \to 0$.
e. $f \to +\infty$ as $x \to 0$.

ANSWER: a
POINTS: 1
REFERENCES: 6.5.74
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 5/18/2015 5:56 AM

29. Describe the behavior of the function below as x approaches zero.

$f(x) = \dfrac{|x|}{3}\sin x$

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a. $f \to -\infty$ as $x \to 0$.
b. $f \to -1$ as $x \to 0$.
c. $f \to 1$ as $x \to 0$.
d. $f \to +\infty$ as $x \to 0$.
e. $f \to 0$ as $x \to 0$.

ANSWER: e
POINTS: 1
REFERENCES: 6.5.75
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 5/18/2015 5:57 AM

30. Describe the behavior of the function below as x approaches zero.

$$f(x) = \frac{|x|}{5}\cos(x)$$

a. $f \to +\infty$ as $x \to 0$.
b. $f \to 1$ as $x \to 0$.
c. $f \to 0$ as $x \to 0$.
d. $f \to -1$ as $x \to 0$.
e. $f \to -\infty$ as $x \to 0$.

ANSWER: c
POINTS: 1
REFERENCES: 6.5.77
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 5/18/2015 5:57 AM

31. Describe the behavior of the function below as x approaches 0^+.

$$f(x) = 3\cot x$$

a. $f \to +\infty$ as $x \to 0^+$.
b. $f \to 0$ as $x \to 0^+$.
c. $f \to -1$ as $x \to 0^+$.
d. $f \to -\infty$ as $x \to 0^+$.
e. $f \to 1$ as $x \to 0^+$.

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Section 1.6 - Graphs of Other Trigonometric Functions

ANSWER: a
POINTS: 1
REFERENCES: 6.5.101a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 5/18/2015 6:04 AM

32. Describe the behavior of the function below as x approaches π^-.

$f(x) = 2\cot x$

a. $f \to -\infty$ as $x \to \pi^-$.
b. $f \to +\infty$ as $x \to \pi^-$.
c. $f \to 1$ as $x \to \pi^-$.
d. $f \to 0$ as $x \to \pi^-$.
e. $f \to -1$ as $x \to \pi^-$.

ANSWER: a
POINTS: 1
REFERENCES: 6.5.101b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 5/18/2015 6:07 AM

33. Describe the behavior of the function below as x approaches $\frac{\pi}{2}^+$.

$f(x) = \tan x$

a. $f \to +\infty$ as $x \to \frac{\pi}{2}^+$.
b. $f \to 0$ as $x \to \frac{\pi}{2}^+$.
c. $f \to -\infty$ as $x \to \frac{\pi}{2}^+$.
d. $f \to 1$ as $x \to \frac{\pi}{2}^+$.

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e. $f \to -1$ as $x \to \frac{\pi}{2}^{+}$.

ANSWER: c
POINTS: 1
REFERENCES: 6.5.99a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 5/18/2015 6:07 AM

34. Describe the behavior of the function below as x approaches $-\frac{\pi}{2}^{-}$.

$f(x) = 4\tan x$

a. $f \to +\infty$ as $x \to -\frac{\pi}{2}^{-}$.

b. $f \to 0$ as $x \to -\frac{\pi}{2}^{-}$.

c. $f \to 1$ as $x \to -\frac{\pi}{2}^{-}$.

d. $f \to -\infty$ as $x \to -\frac{\pi}{2}^{-}$.

e. $f \to -1$ as $x \to -\frac{\pi}{2}^{-}$.

ANSWER: a
POINTS: 1
REFERENCES: 6.5.99d
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 5/18/2015 6:08 AM

35. Use a graphing utility to select the graph of the function below and the damping factor of the function in the same viewing window.

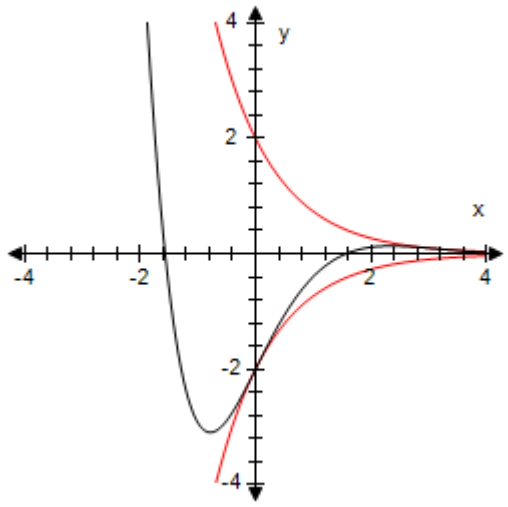
$f(x) = 2e^{-x}\cos x$

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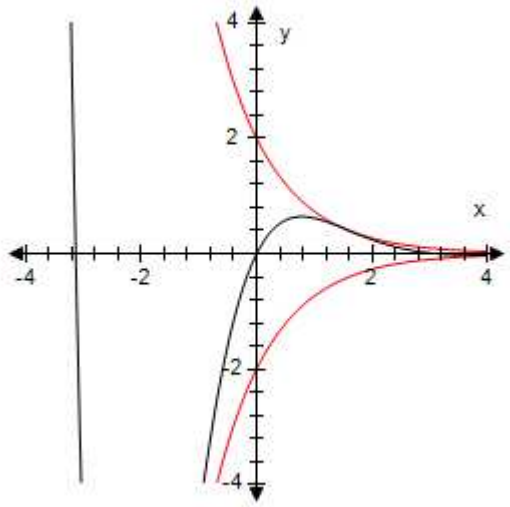
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Section 1.6 - Graphs of Other Trigonometric Functions

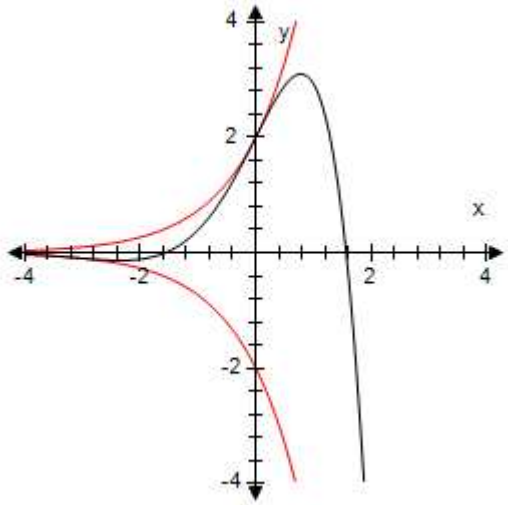
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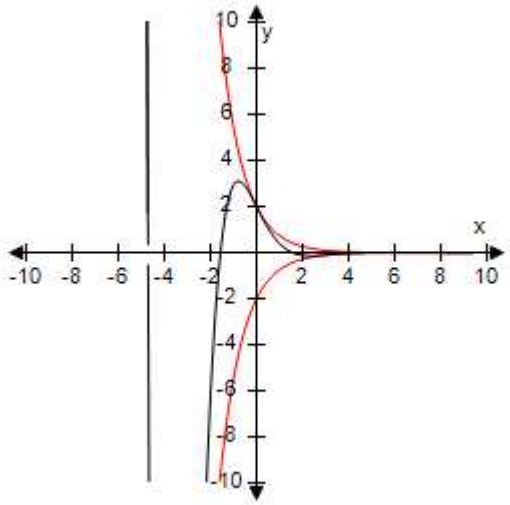
b.



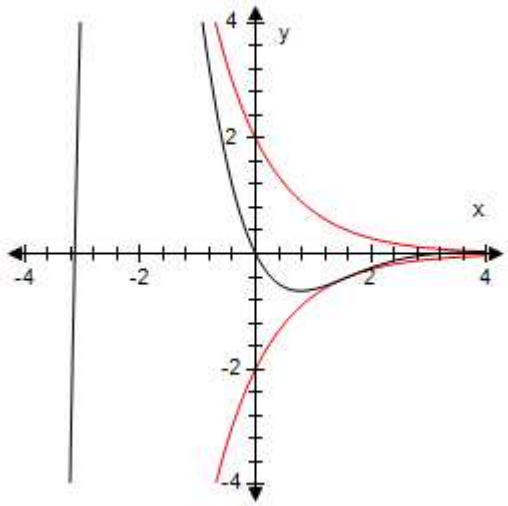
c.



d.



e.



ANSWER: d

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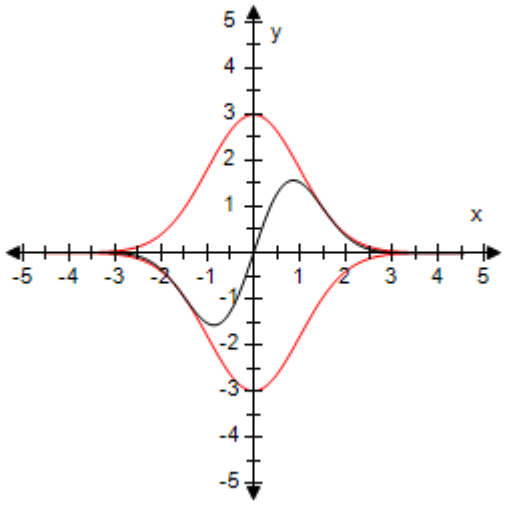
Section 1.6 - Graphs of Other Trigonometric Functions

POINTS:	1
REFERENCES:	6.5.82
QUESTION TYPE:	Multi-Mode (Multiple choice)
HAS VARIABLES:	True
STUDENT ENTRY MODE:	Basic
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DATE MODIFIED:	5/18/2015 6:08 AM

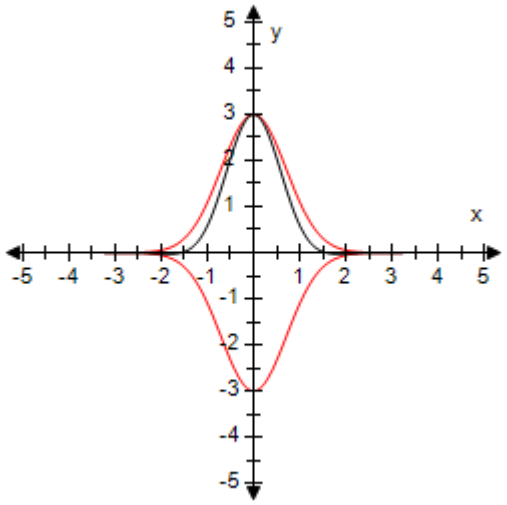
36. Use a graphing utility to select the graph of the function below and the damping factor of the function in the same viewing window.

$$g(x) = 3e^{-\frac{x^2}{2}} \sin x$$

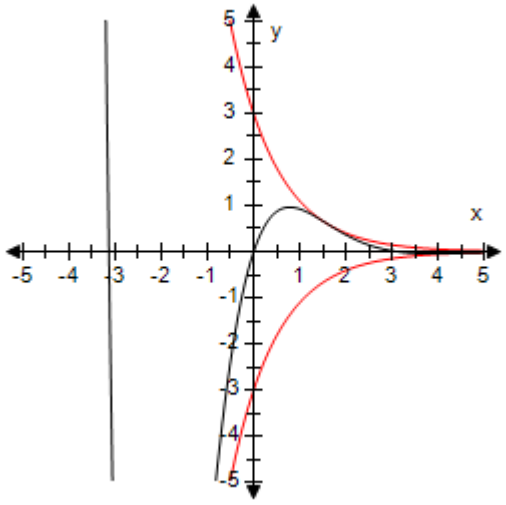
a.



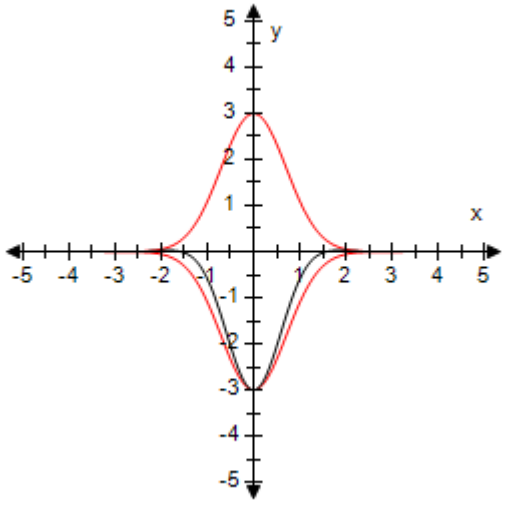
b.



c.



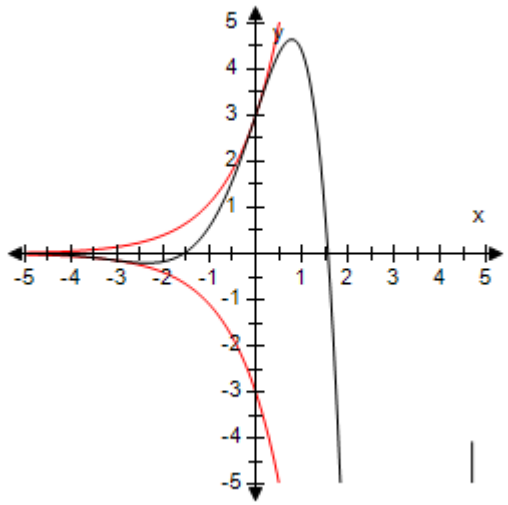
d.



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e.

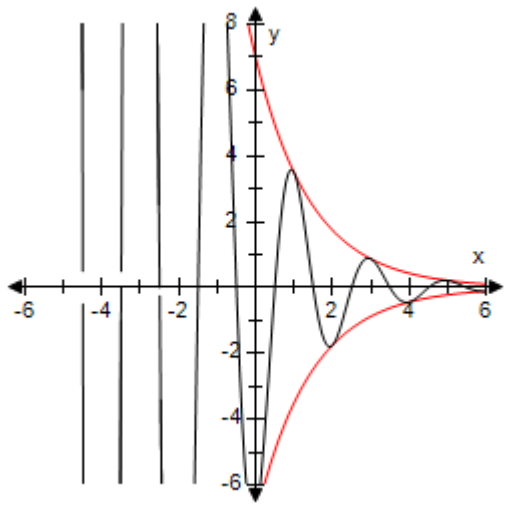


ANSWER: a
POINTS: 1
REFERENCES: 6.5.81
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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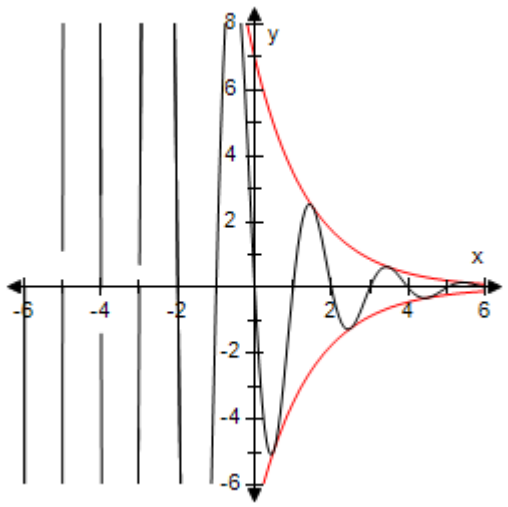
37. Use a graphing utility to select the graph of the function below and the damping factor of the function in the same viewing window.

$f(x) = 7 \cdot 2^{-\frac{x}{4}} \cos \pi x$

a.



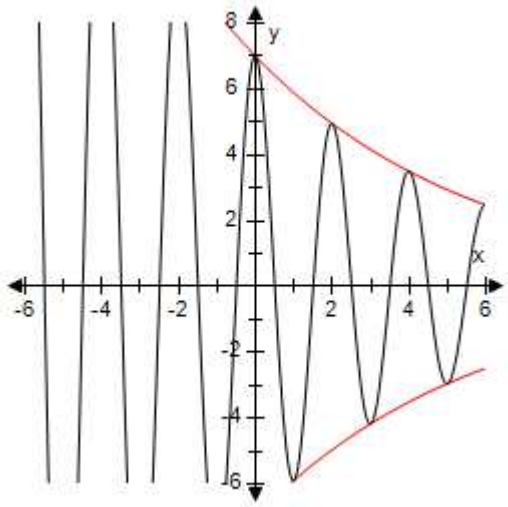
b.



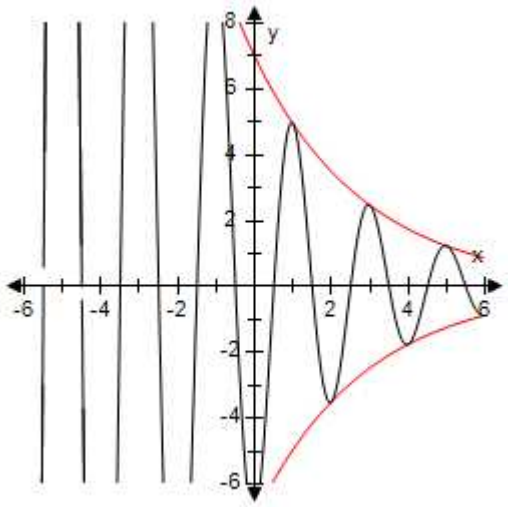
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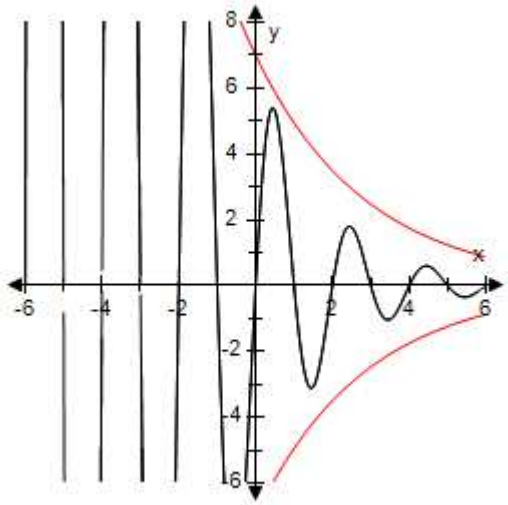
c.



d.



e.



ANSWER: c
POINTS: 1
REFERENCES: 6.5.83
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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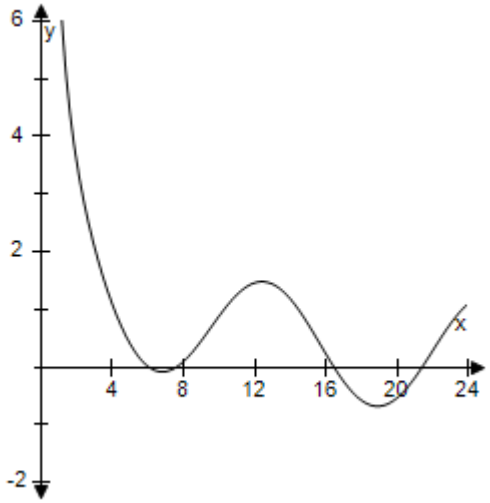
38. Use a graphing utility to select the graph of the function.

$$y = \frac{6}{x} + \cos x,\ x > 0$$

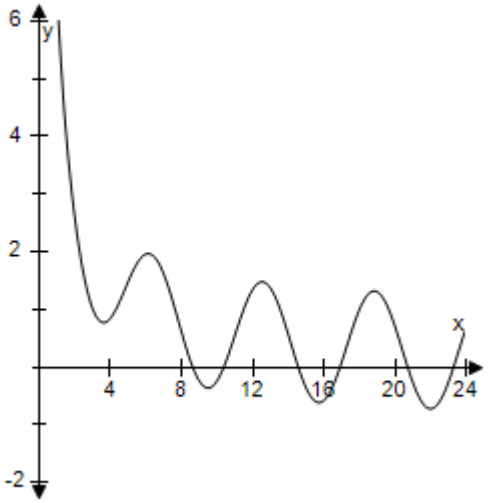
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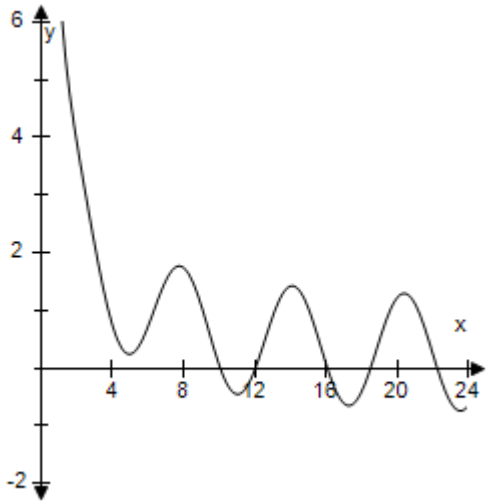
a.



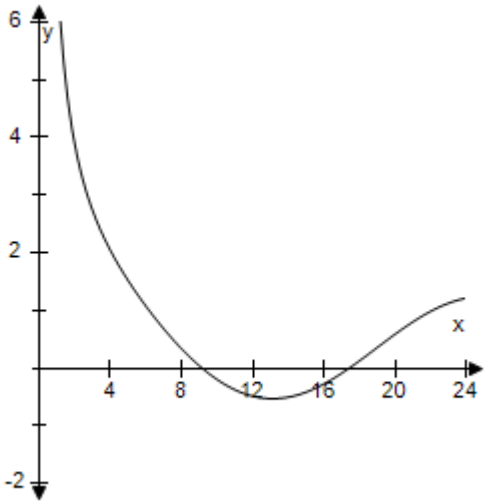
b.



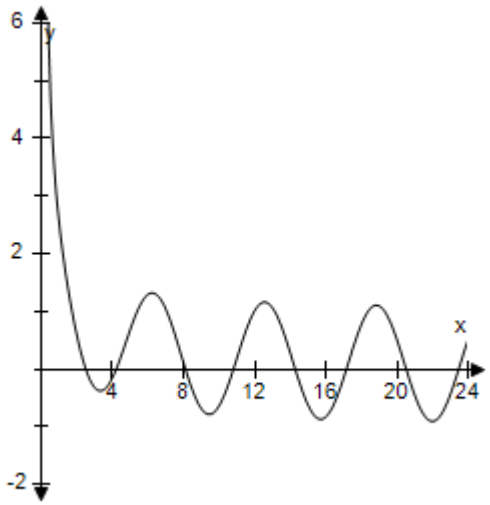
c.



d.



e.



ANSWER: b

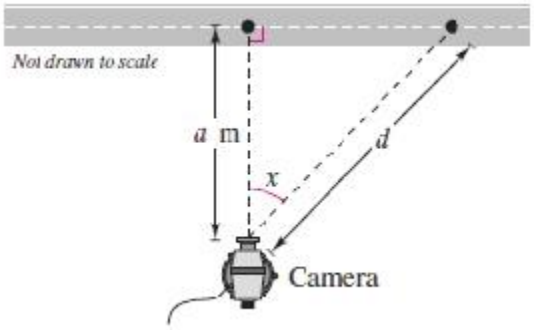
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Section 1.6 - Graphs of Other Trigonometric Functions

POINTS: 1
REFERENCES: 6.5.85
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 6/4/2021 7:16 AM

39. A television camera is on a reviewing platform a meters from the street on which a parade will be passing from left to right (see figure). Write the distance d from the camera to a particular unit in the parade as a function of the angle x.
$a = 26$.



a. $d = 26\tan x$
b. $d = 26\sec x$
c. $d = 26\cos x$
d. $d = 26\cot x$
e. $d = 26\sin x$

ANSWER: b
POINTS: 1
REFERENCES: 6.5.92
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
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40. The projected monthly sales (in thousands of units) of lawn mowers (a seasonal product) are modeled by

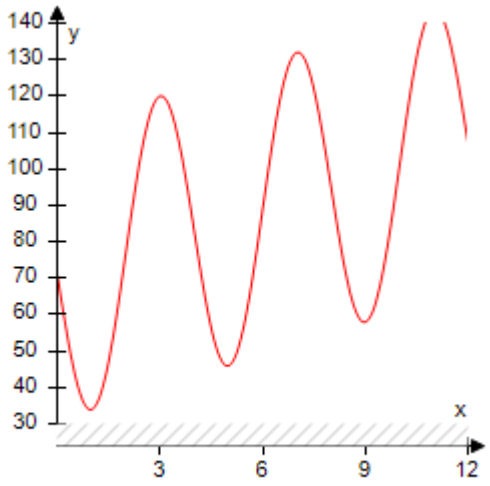
$$S = 71 + 3t - 40\cos\left(\frac{\pi t}{6}\right)$$

where t is the time (in months), with $t = 1$ corresponding to January. Select the graph of the sales function over 1 year.

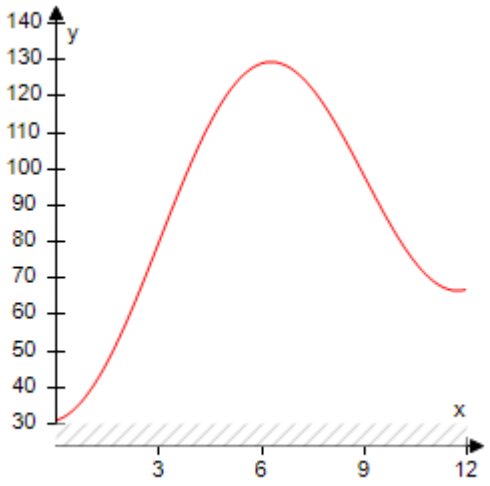
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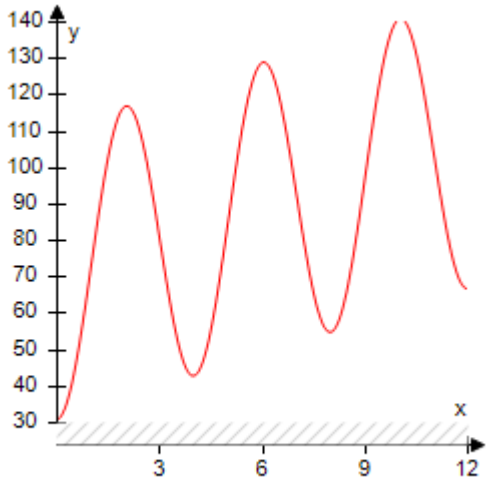
a.



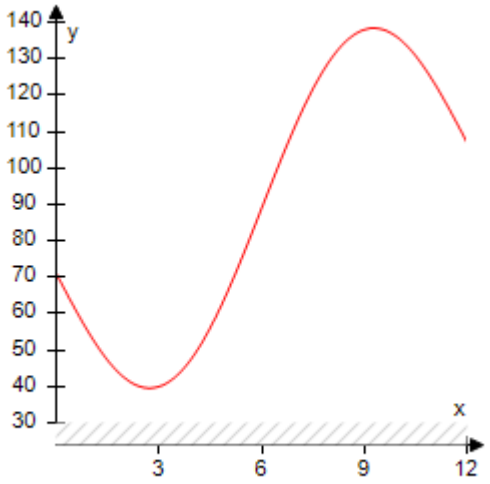
b.



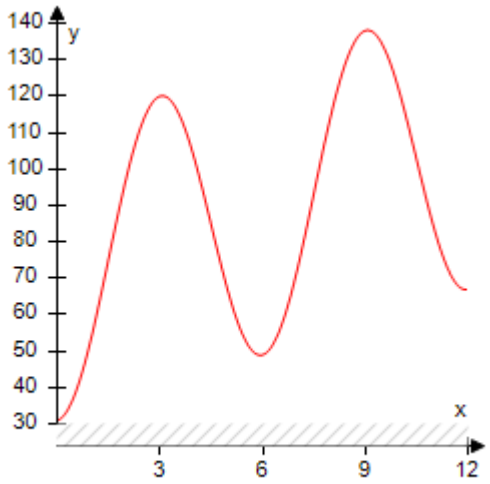
c.



d.



e.



ANSWER: b

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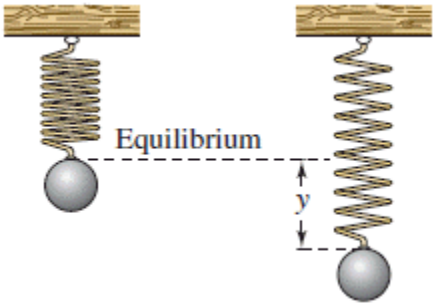
Section 1.6 - Graphs of Other Trigonometric Functions

POINTS:	1
REFERENCES:	6.5.94
QUESTION TYPE:	Multi-Mode (Multiple choice)
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STUDENT ENTRY MODE:	Basic
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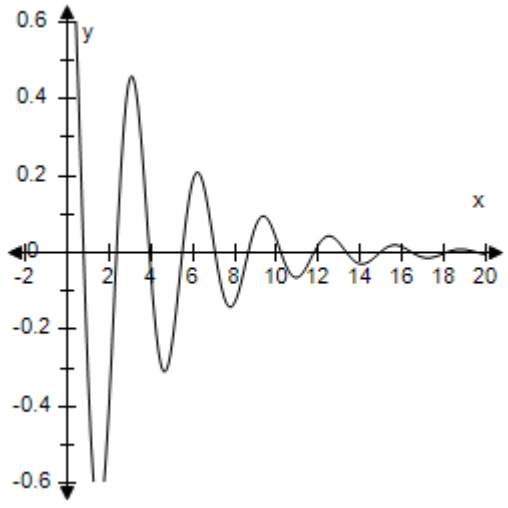
41. An object weighing W pounds is suspended from the ceiling by a steel spring (see figure). The weight is pulled downward (positive direction) from its equilibrium position and released. The resulting motion of the weight is described by the function

$$y = \frac{1}{2}e^{-\frac{t}{4}}\cos 2t,\ t > 0,$$

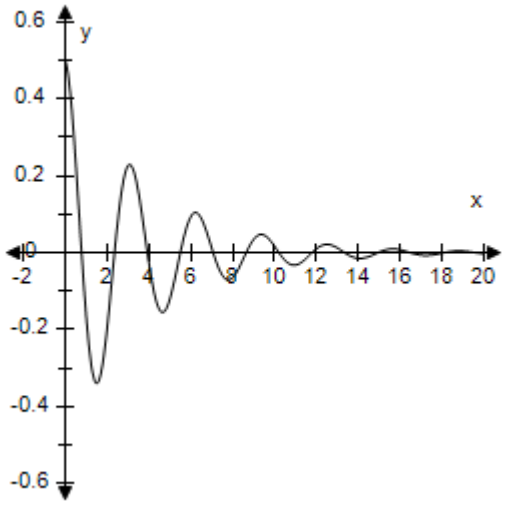
where y is the distance (in feet) and t is the time (in seconds).
Use a graphing utility to select the graph of the function.



a.



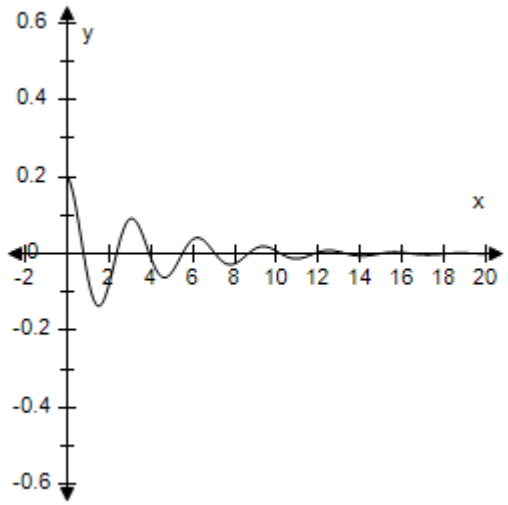
b.



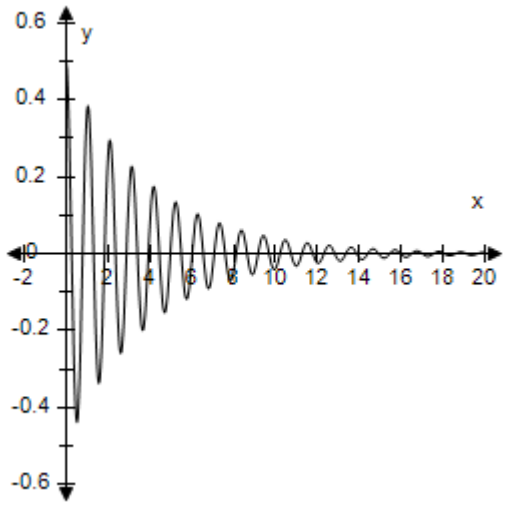
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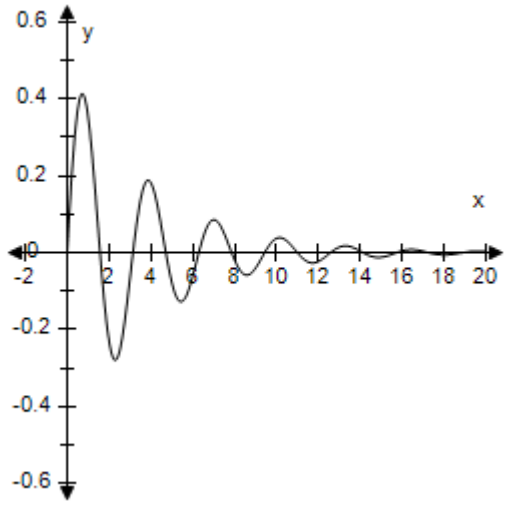
c.



d.



e.



ANSWER: b
POINTS: 1
REFERENCES: 6.5.95a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 11/24/2014 5:58 AM

42. Determine whether the statement is true or false. Justify your answer.

The graph of $y = 3\csc x$ can be obtained on a calculator by graphing the reciprocal of $y = 3\sin x$.

a. True
b. False

ANSWER: b

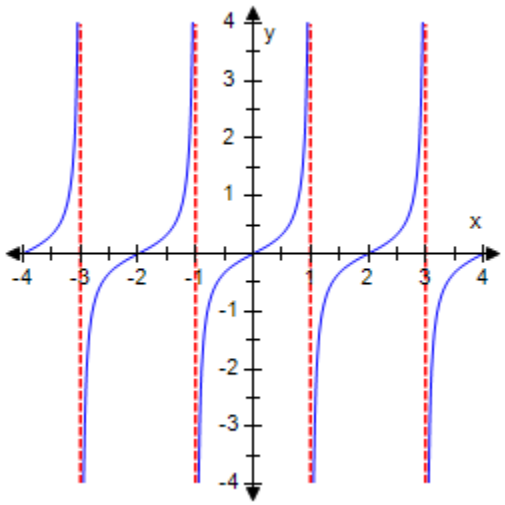
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Section 1.6 - Graphs of Other Trigonometric Functions

POINTS: 1
REFERENCES: 6.4.96
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 11/24/2014 6:02 AM

43. Which of the following functions is represented by the graph below?



a. $y = \frac{1}{3}\csc\frac{\pi x}{2}$

b. $y = \frac{1}{3}\tan\frac{\pi x}{2}$

c. $y = \cot(x + \pi)$

d. $y = \frac{1}{3}\csc \pi x$

e. $y = \sec\left(\frac{x}{3}\right)$

ANSWER: b
POINTS: 1
REFERENCES: 6.5.13
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 11/24/2014 6:35 AM

44. Select the graph of the given function. Make sure to include at least two periods.

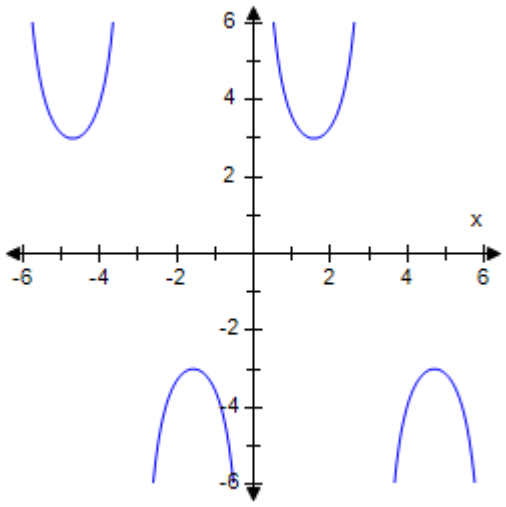
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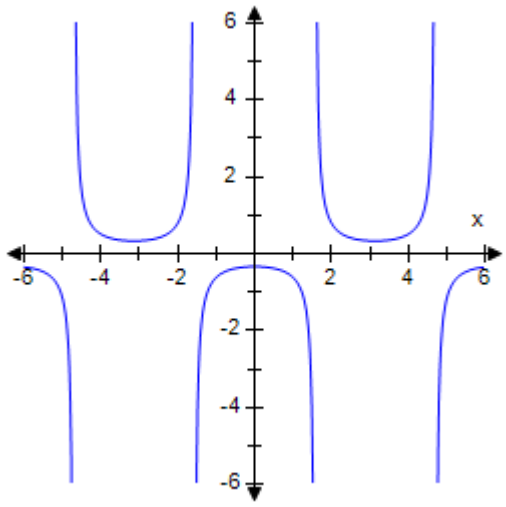
Section 1.6 - Graphs of Other Trigonometric Functions

$y = -3\sec(x + \pi)$

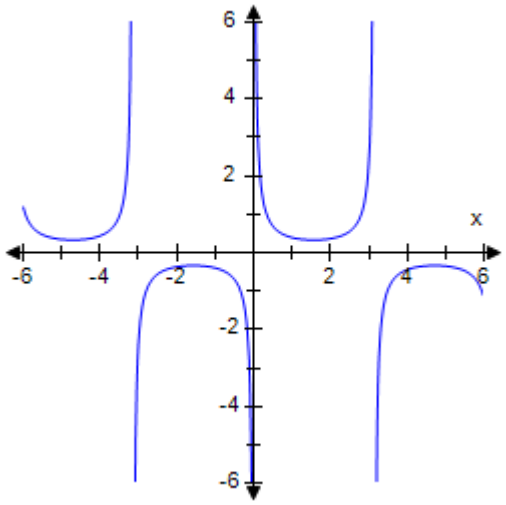
a.



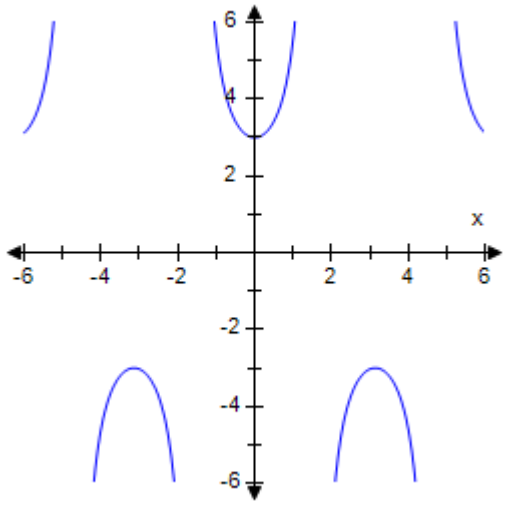
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c.



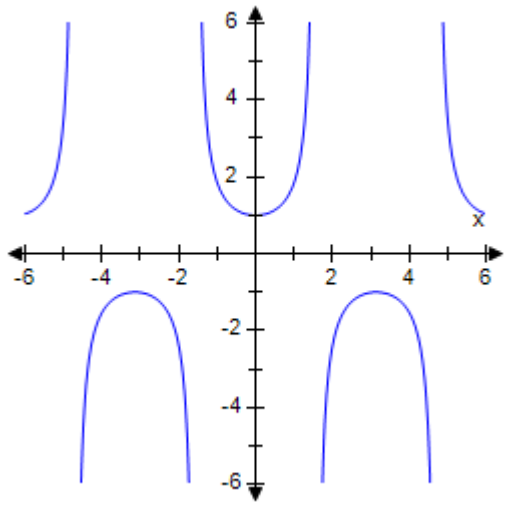
d.



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e.

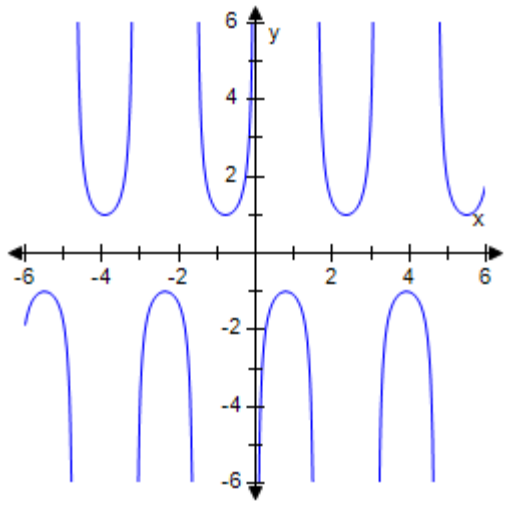


ANSWER: d
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QUESTION TYPE: Multi-Mode (Multiple choice)
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STUDENT ENTRY MODE: Basic
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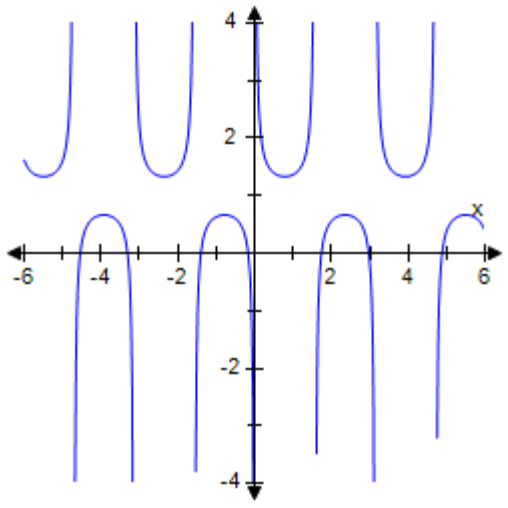
45. Select the graph of the given function. Make sure to include at least two periods.

$y = \csc 2x$

a.



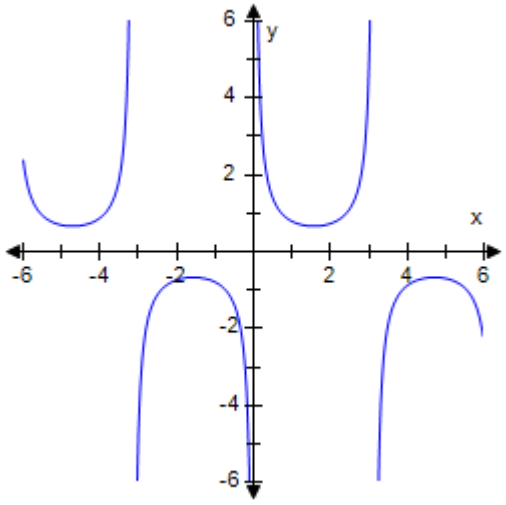
b.



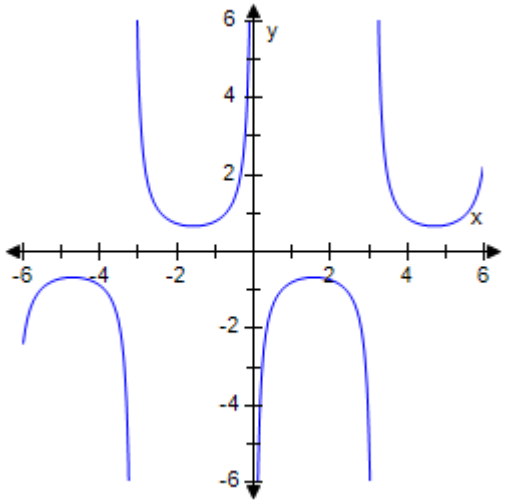
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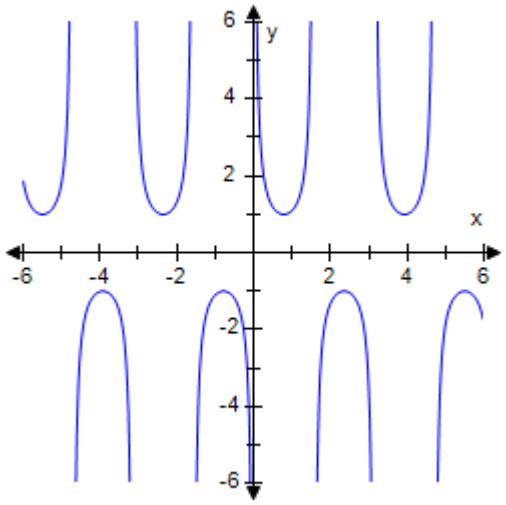
c.



d.



e.



ANSWER: e
POINTS: 1
REFERENCES: 6.5.23
QUESTION TYPE: Multi-Mode (Multiple choice)
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STUDENT ENTRY MODE: Basic
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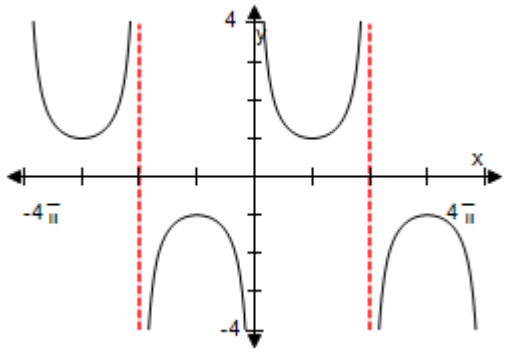
46. Use a graphing utility to select the graph of the function below, making sure to show at least two periods.

$y = \sec\frac{x}{2}$

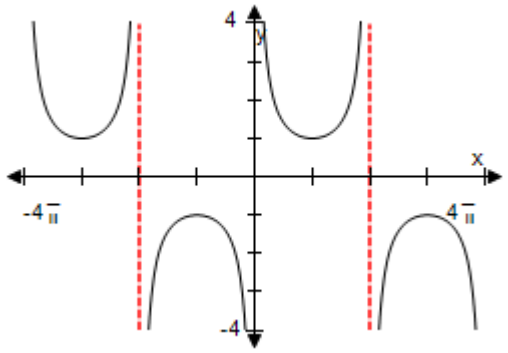
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Section 1.6 - Graphs of Other Trigonometric Functions



Xscl = $\frac{\pi}{2}$

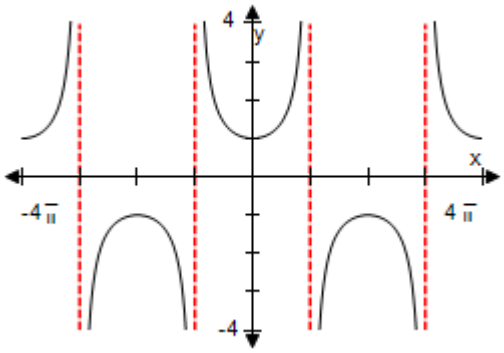


Xscl = $\frac{\pi}{2}$

Xscl = $\frac{\pi}{2}$

Xscl = $\frac{\pi}{2}$

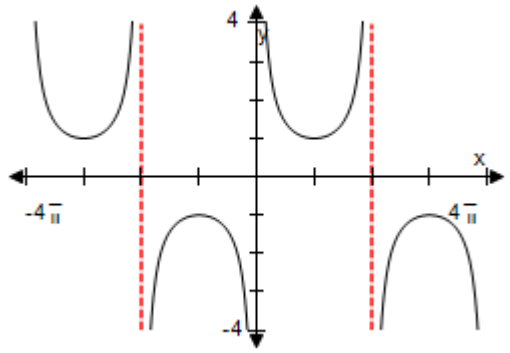
a.



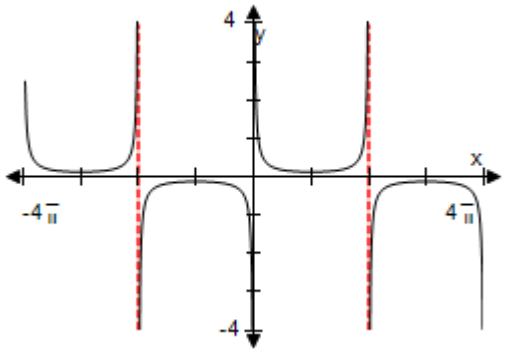
b.

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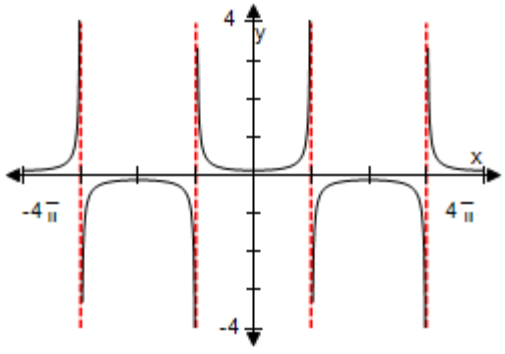
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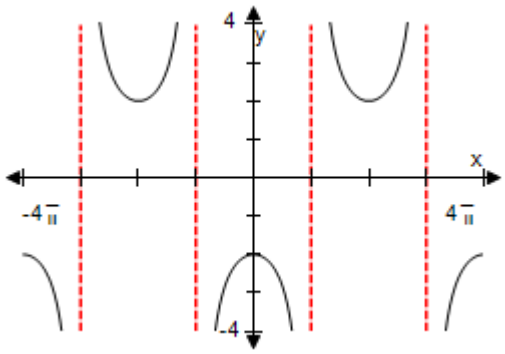
c.



d.



e.



ANSWER: a
POINTS: 1
REFERENCES: 6.5.39

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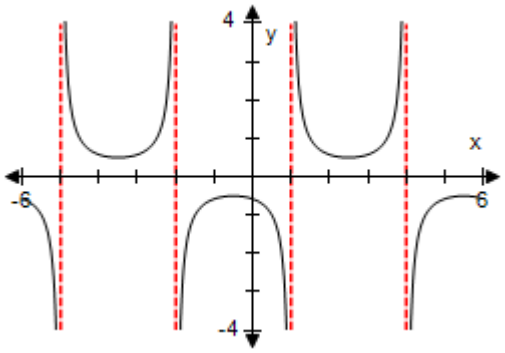
Section 1.6 - Graphs of Other Trigonometric Functions

QUESTION TYPE:	Multi-Mode (Multiple choice)
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STUDENT ENTRY MODE:	Basic
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DATE MODIFIED:	5/19/2015 8:07 AM

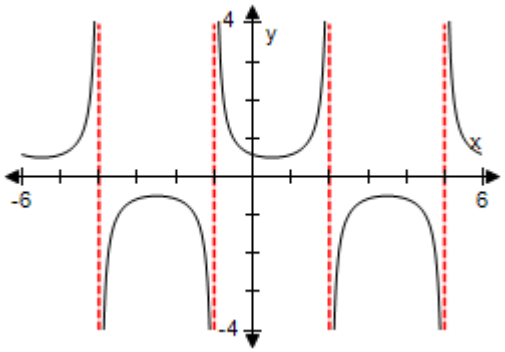
47. Use a graphing utility to select the graph of the expression below, making sure to show at least two periods.

$$y = \frac{1}{2}\csc\left(\frac{\pi x}{3} - \frac{\pi}{3}\right)$$

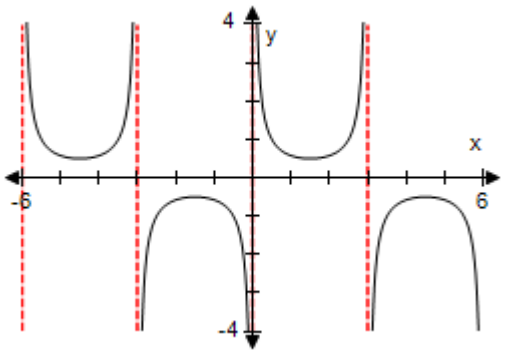
a.



b.



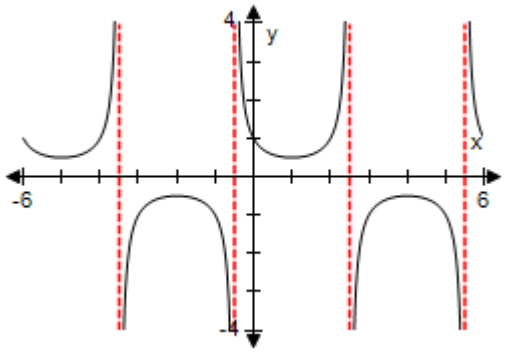
c.



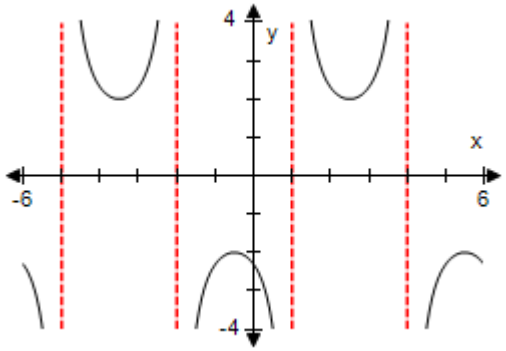
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d.



e.



ANSWER: a
POINTS: 1
REFERENCES: 6.5.45
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 5/19/2015 8:20 AM

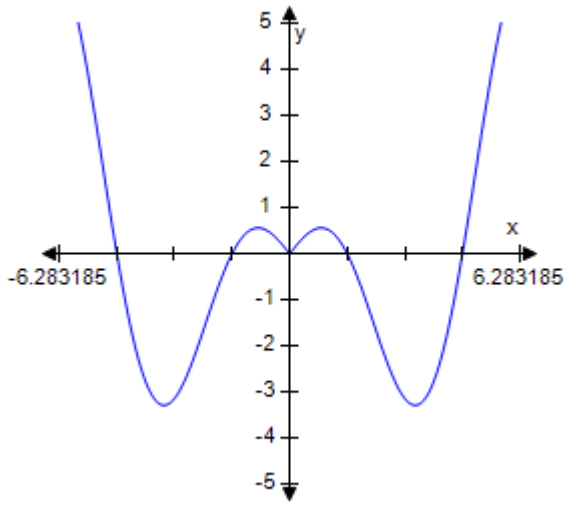
48. Determine which of the graphs below represents

$y = |x \sin x|$

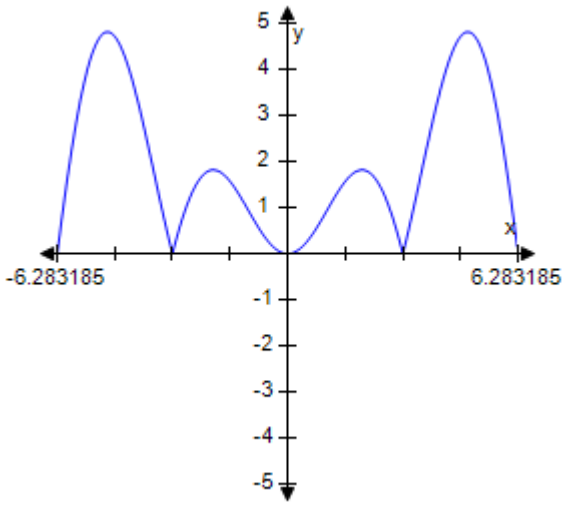
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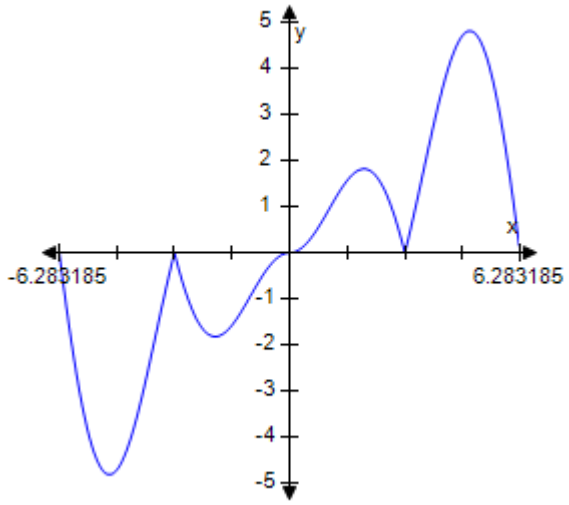
a.



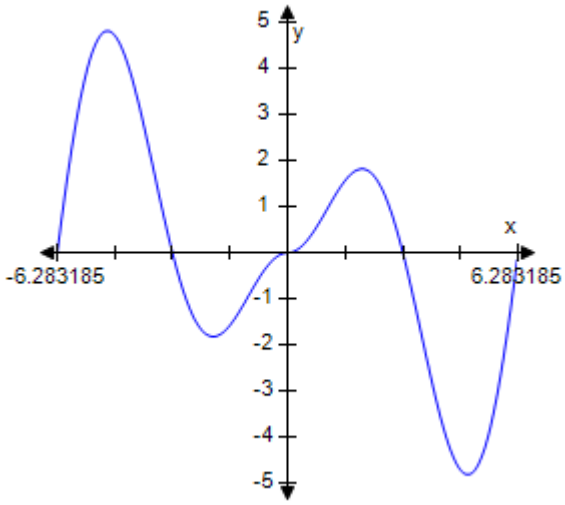
b.



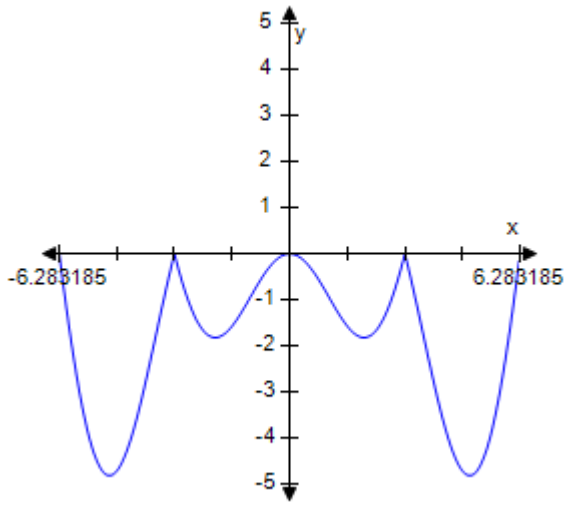
c.



d.



e.



ANSWER: b

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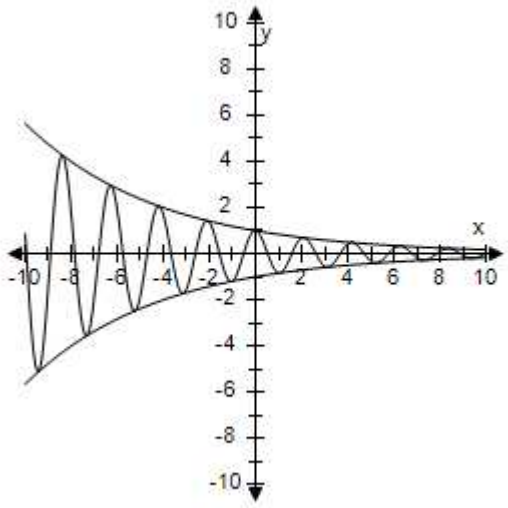
Section 1.6 - Graphs of Other Trigonometric Functions

POINTS: 1
REFERENCES: 6.5.75
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 5/19/2015 8:34 AM

49. Use a graphing utility to select the graph the damping factor and the function below in the same viewing window. Describe the behavior of the function as x increases without bound.

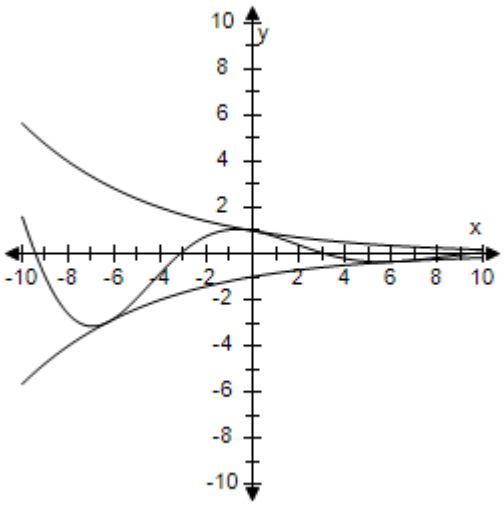
$f(x) = 2^{-\frac{x}{4}} \cos x$

a.



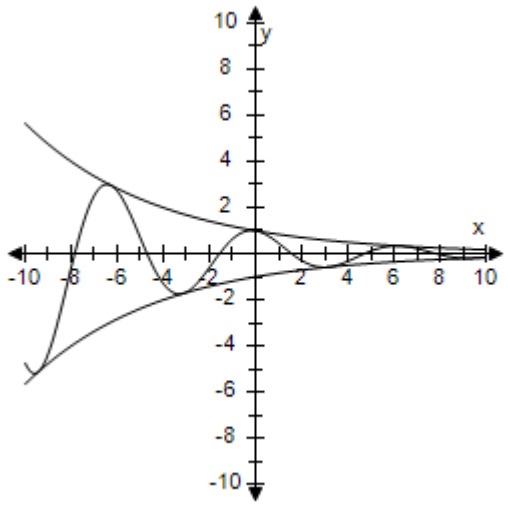
As $x \to \infty, f(x) \to 0$.

b.



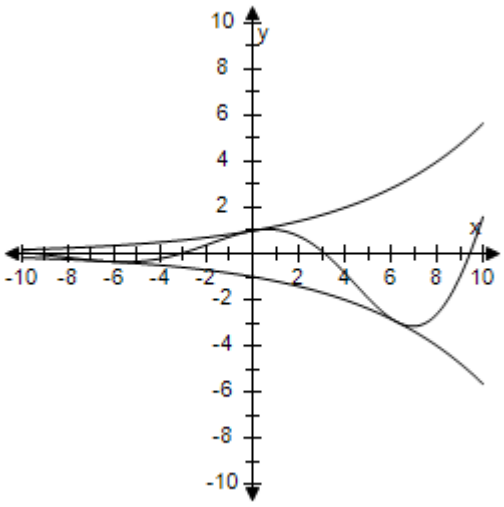
As $x \to \infty, f(x) \to 0$.

c.



As $x \to \infty, f(x) \to 0$.

d.

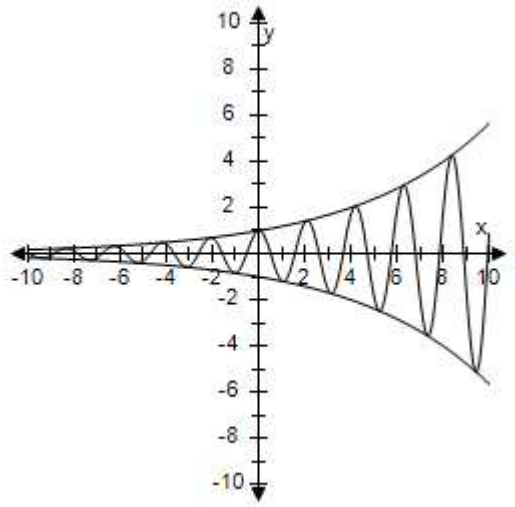


The function $f(x)$ is unbounded as $x \to \infty$.

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e.



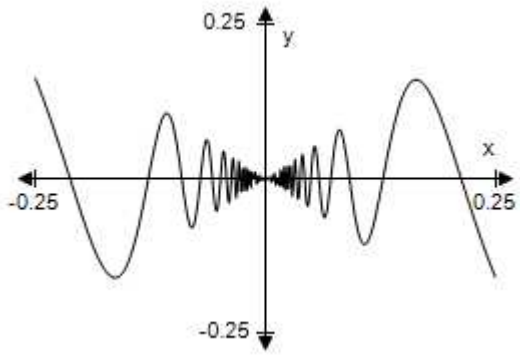
The function $f(x)$ is unbounded as $x \to \infty$.

ANSWER: c
POINTS: 1
REFERENCES: 6.5.83
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:23 PM
DATE MODIFIED: 5/19/2015 8:36 AM

50. Use a graphing utility to select the graph of the function below. Describe the behavior of the function as x approaches 0.

$$f(x) = x\cos\frac{1}{x}$$

a.

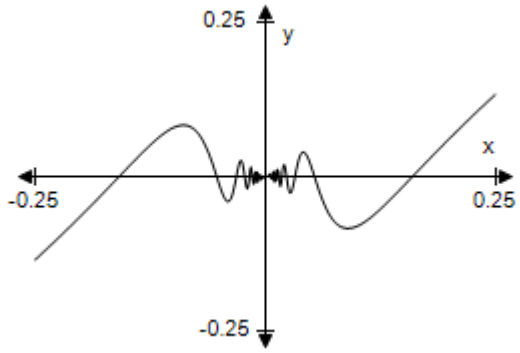


As $x \to 0, f(x) \to 0$.

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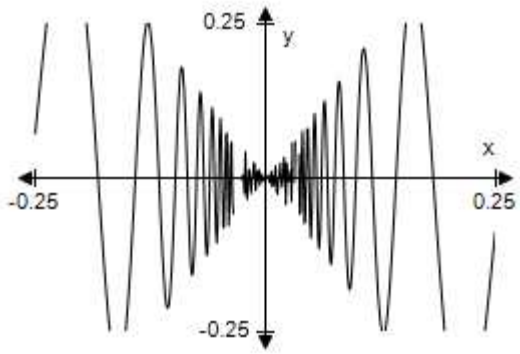
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b.



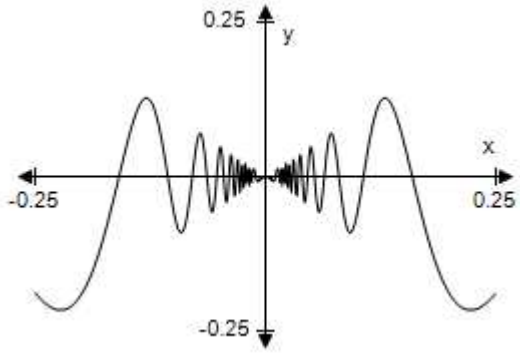
As $x \to 0, f(x) \to 0$.

c.



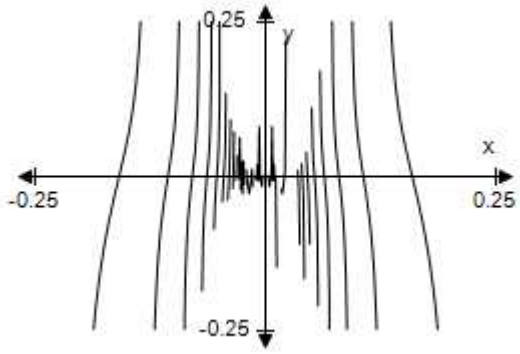
As $x \to 0, f(x) \to 0$.

d.



As $x \to 0, f(x) \to 0$.

e.



As $x \to 0, f(x) \to 0$.

ANSWER: a

POINTS: 1

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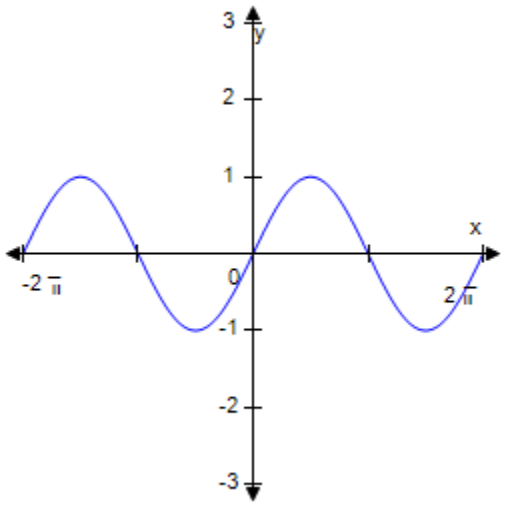
Trigonometry 11th edition Larson Test Bank

Section 1.6 - Graphs of Other Trigonometric Functions

REFERENCES: 6.5.85
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:24 PM
DATE MODIFIED: 5/19/2015 8:41 AM

51. Use the graph shown below to determine if the function is even, odd, or neither.

$y = \sin x$



a. Even
b. Odd
c. Neither

ANSWER: b
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:24 PM
DATE MODIFIED: 5/19/2015 8:45 AM

52. Use a graphing utility to select the graph the damping factor and the function below in the same viewing window. Describe the behavior of the function as x increases without bound.

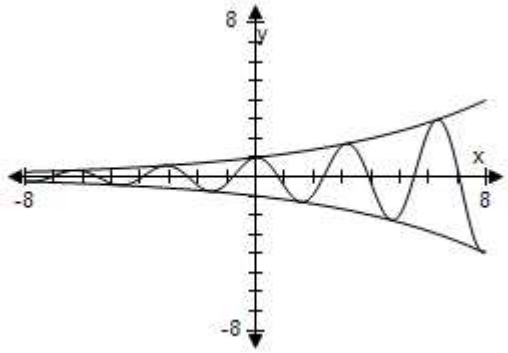
$f(x) = 2^{-x/4}\cos x$

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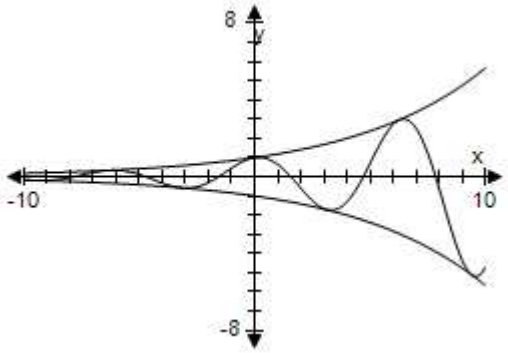
Section 1.6 - Graphs of Other Trigonometric Functions

a.



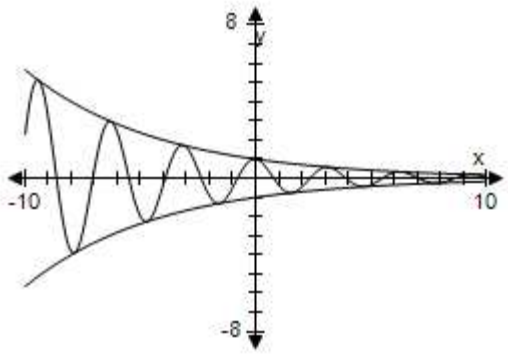
As $x \to \infty, f(x) \to \infty$.

b.



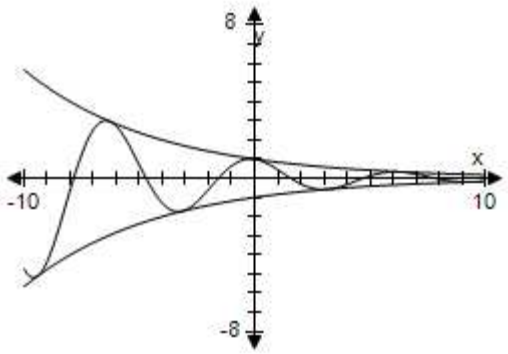
As $x \to \infty, f(x) \to \infty$.

c.



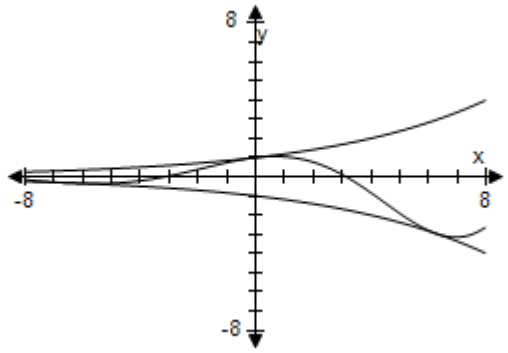
As $x \to \infty, f(x) \to 0$.

d.



As $x \to \infty, f(x) \to 0$.

e.



As $x \to \infty, f(x) \to \infty$.

ANSWER: d
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:24 PM
DATE MODIFIED: 5/19/2015 9:05 AM

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Section 1.7 - Inverse Trigonometric Functions

1. Evaluate the expression. Round your result to two decimal places.

$\arccos 0.23$

a. –0.66
b. 2.34
c. 1.34
d. 3.34
e. 0.34

ANSWER: c
POINTS: 1
REFERENCES: 6.6.23
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:24 PM
DATE MODIFIED: 12/15/2014 1:53 AM

2. Evaluate the expression. Round your result to two decimal places.

$\arcsin 0.45$

a. –1.53
b. –0.53
c. 2.47
d. 0.47
e. 1.47

ANSWER: d
POINTS: 1
REFERENCES: 6.6.24
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:24 PM
DATE MODIFIED: 11/20/2014 6:11 AM

3. Evaluate the expression. Round your result to two decimal places.

$\arccos(-0.6)$

a. 4.21
b. 2.21
c. 3.21
d. 0.21
e. 1.21

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ANSWER: b
POINTS: 1
REFERENCES: 6.6.26
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:24 PM
DATE MODIFIED: 11/20/2014 6:13 AM

4. Evaluate the expression. Round your result to two decimal places.

$\arctan 30$

a. 3.54
b. 0.54
c. 1.54
d. 2.54
e. –0.46

ANSWER: c
POINTS: 1
REFERENCES: 6.6.28
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:24 PM
DATE MODIFIED: 11/20/2014 6:17 AM

5. Evaluate the expression. Round your result to two decimal places.

$\sin^{-1} 0.65$

a. 2.71
b. –0.29
c. 1.71
d. 0.71
e. –1.29

ANSWER: d
POINTS: 1
REFERENCES: 6.6.29
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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Section 1.7 - Inverse Trigonometric Functions

6. Evaluate the expression. Round your result to two decimal places.

$\cos^{-1} 0.44$

a. 2.12
b. 0.12
c. 1.12
d. –0.88
e. 3.12

ANSWER: c
POINTS: 1
REFERENCES: 6.6.30
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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7. Evaluate the expression. Round your result to two decimal places.

$\arcsin(-0.130)$

a. 1.87
b. –2.13
c. –1.13
d. 0.87
e. –0.13

ANSWER: e
POINTS: 1
REFERENCES: 6.6.32
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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8. Evaluate the expression. Round your result to two decimal places.

$\arctan 2.6$

a. 2.20
b. 0.20
c. 3.20
d. –0.80
e. 1.20

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ANSWER: e
POINTS: 1
REFERENCES: 6.6.34
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HAS VARIABLES: True
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9. Evaluate the expression. Round your result to two decimal places.

$$\arcsin \frac{2}{3}$$

a. 1.73
b. –0.27
c. –1.27
d. 2.73
e. 0.73

ANSWER: e
POINTS: 1
REFERENCES: 6.6.35
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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10. Evaluate the expression. Round your result to two decimal places.

$$\arccos\left(-\frac{2}{3}\right)$$

a. 0.30
b. 1.30
c. 4.30
d. 3.30
e. 2.30

ANSWER: e
POINTS: 1
REFERENCES: 6.6.36
QUESTION TYPE: Multi-Mode (Multiple choice)
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11. Evaluate the expression. Round your result to two decimal places.

$$\tan^{-1}\left(-\frac{97}{4}\right)$$

a. –3.53
b. 0.47
c. –0.53
d. –1.53
e. –2.53

ANSWER: d
POINTS: 1
REFERENCES: 6.6.38
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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12. Evaluate the expression. Round your result to two decimal places.

$$\tan^{-1}\left(-\sqrt{588}\right)$$

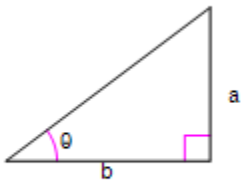
a. –0.53
b. –1.53
c. 0.47
d. –3.53
e. –2.53

ANSWER: b
POINTS: 1
REFERENCES: 6.6.39
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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13. Use an inverse trigonometric function to write θ as a function of x.

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$a = x$
$b = 6$

a. $\theta = \arctan\dfrac{6}{x}$

b. $\theta = \arccos\dfrac{x}{6}$

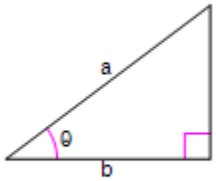
c. $\theta = \operatorname{arccot}\dfrac{x}{6}$

d. $\theta = \arcsin\dfrac{x}{6}$

e. $\theta = \arctan\dfrac{x}{6}$

ANSWER:	e
POINTS:	1
REFERENCES:	6.6.43
QUESTION TYPE:	Multi-Mode (Multiple choice)
HAS VARIABLES:	True
STUDENT ENTRY MODE:	Basic
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14. Use an inverse trigonometric function to write θ as a function of x.



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$a = x$
$b = 10$

a. $\theta = \arcsin \frac{x}{10}$

b. $\theta = \arccos \frac{10}{x}$

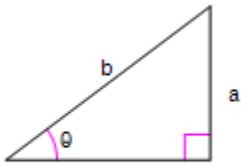
c. $\theta = \operatorname{arccot} \frac{x}{10}$

d. $\theta = \arccos \frac{x}{10}$

e. $\theta = \arctan \frac{x}{10}$

ANSWER:	b
POINTS:	1
REFERENCES:	6.6.44
QUESTION TYPE:	Multi-Mode (Multiple choice)
HAS VARIABLES:	True
STUDENT ENTRY MODE:	Basic
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15. Use an inverse trigonometric function to write θ as a function of x.



$a = x + 6$
$b = 2$

a. $\theta = \arctan \frac{x+6}{2}$

b. $\theta = \arcsin \frac{2}{x+6}$

c. $\theta = \operatorname{arccot} \frac{x+6}{2}$

d. $\theta = \arccos \frac{x+6}{2}$

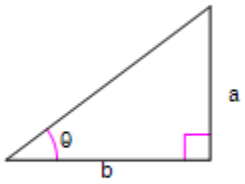
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e. $\theta = \arcsin \dfrac{x+6}{2}$

ANSWER: e
POINTS: 1
REFERENCES: 6.6.45
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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16. Use an inverse trigonometric function to write θ as a function of x.



$a = x + 5$
$b = 10$

a. $\theta = \arccos \dfrac{x+5}{10}$

b. $\theta = \arctan \dfrac{x+5}{10}$

c. $\theta = \arctan \dfrac{10}{x+5}$

d. $\theta = \operatorname{arccot} \dfrac{x+5}{10}$

e. $\theta = \arcsin \dfrac{x+5}{10}$

ANSWER: b
POINTS: 1
REFERENCES: 6.6.46
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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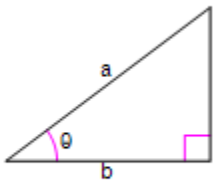
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17. Use an inverse trigonometric function to write θ as a function of x.



$a = 5x$
$b = x + 9$

a. $\theta = \arctan \dfrac{x+9}{5x}$

b. $\theta = \arcsin \dfrac{x+9}{5x}$

c. $\theta = \operatorname{arcsec} \dfrac{x+9}{5x}$

d. $\theta = \operatorname{arccsc} \dfrac{x+9}{5x}$

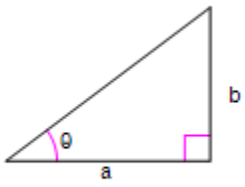
e. $\theta = \arccos \dfrac{x+9}{5x}$

ANSWER: e
POINTS: 1
REFERENCES: 6.6.47
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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18. Use an inverse trigonometric function to write θ as a function of x.

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$a = x^2 - 16$
$b = x - 4$

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

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

c. $\theta = \arctan \dfrac{1}{x+4}, x \neq 4$

d. $\theta = \arccos \dfrac{1}{x+4}, x \neq 4$

e. $\theta = \operatorname{arccot} \dfrac{1}{x+4}, x \neq 4$

ANSWER: c
POINTS: 1
REFERENCES: 6.6.48
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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19. Use the properties of inverse trigonometric functions to evaluate the expression.

$\tan(\arctan 40)$

a. $\tan^{-1} 40$

b. -40

c. $\dfrac{\pi}{40}$

d. $\tan 40$

e. 40

ANSWER: e

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POINTS: 1
REFERENCES: 6.6.50
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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20. Use the properties of inverse trigonometric functions to evaluate the expression.

$\sin[\arcsin(-0.4)]$

a. $\sin^{-1}0.4$
b. $\sin(-0.4)$
c. 0.4
d. -0.4
e. $\dfrac{\pi}{0.4}$

ANSWER: d
POINTS: 1
REFERENCES: 6.6.52
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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21. Use the properties of inverse trigonometric functions to evaluate the expression.

$\arcsin(\sin 5\pi)$

a. 1
b. –1
c. $\cos^{-1}5\pi$
d. 0
e. $\sin^{-1}5\pi$

ANSWER: d
POINTS: 1
REFERENCES: 6.6.53
QUESTION TYPE: Multi-Mode (Multiple choice)
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22. Find an algebraic expression that is equivalent to the expression.

$\cos(\arcsin 4x)$

a. $\dfrac{\sqrt{1+16x^2}}{1+16x^2}$

b. $\dfrac{\sqrt{1-16x^2}}{1-16x^2}$

c. $\sqrt{16x^2-1}$

d. $\sqrt{1+16x^2}$

e. $\sqrt{1-16x^2}$

ANSWER: e
POINTS: 1
REFERENCES: 6.6.69
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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23. Find an algebraic expression that is equivalent to the expression.

$\sec(\arctan 4x)$

a. $\sqrt{16x^2+1}$

b. $\sqrt{1-16x^2}$

c. $\dfrac{\sqrt{16x^2-1}}{16x^2-1}$

d. $\sqrt{16x^2-1}$

e. $\dfrac{\sqrt{16x^2+1}}{16x^2+1}$

ANSWER: a
POINTS: 1

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REFERENCES: 6.6.70
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HAS VARIABLES: True
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24. Find an algebraic expression that is equivalent to the expression.

$$\tan\left(\arccos\frac{x}{6}\right)$$

a. $\dfrac{\sqrt{36-x^2}}{x}$

b. $\dfrac{36-x^2}{x}$

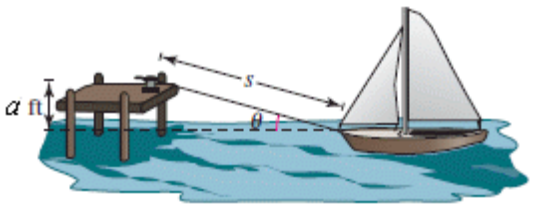
c. $\dfrac{\sqrt{36+x^2}}{x}$

d. $\dfrac{\sqrt{36+x^2}}{36+x^2}$

e. $\dfrac{\sqrt{36-x^2}}{36-x^2}$

ANSWER: a
POINTS: 1
REFERENCES: 6.6.73
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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25. A boat is pulled in by means of a winch located on a dock $a = 2$ feet above the deck of the boat (see figure). Let θ be the angle of elevation from the boat to the winch and let s be the length of the rope from the winch to the boat. Write θ as a function of s.



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a. $\theta = \operatorname{arccsc}\frac{2}{s}$

b. $\theta = \operatorname{arcsec}\frac{2}{s}$

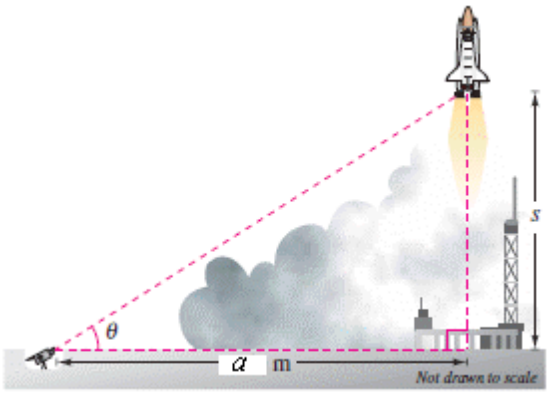
c. $\theta = \arccos\frac{2}{s}$

d. $\theta = \arctan\frac{2}{s}$

e. $\theta = \arcsin\frac{2}{s}$

ANSWER: e
POINTS: 1
REFERENCES: 6.6.105a
QUESTION TYPE: Multi-Mode (Multiple choice)
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26. A television camera at ground level is filming the lift-off of a space shuttle at a point $a = 925$ meters from the launch pad (see figure). Let θ be the angle of elevation to the shuttle and let s be the height of the shuttle. Write θ as a function of s.



a. $\theta = \arctan\frac{s}{925}$

b. $\theta = \arcsin\frac{s}{925}$

c. $\theta = \operatorname{arccsc}\frac{s}{925}$

d. $\theta = \arctan\frac{925}{s}$

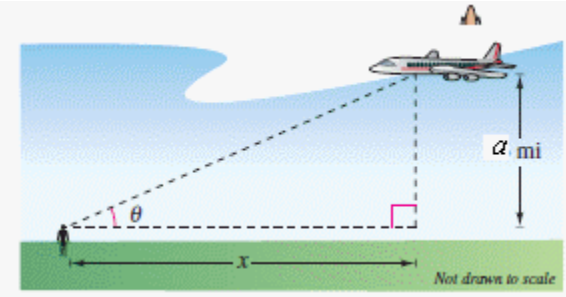
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e. $\theta = \text{arccot}\dfrac{s}{925}$

ANSWER: a
POINTS: 1
REFERENCES: 6.6.106a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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27. An airplane flies at an altitude of $a = 6$ miles toward a point directly over an observer. Consider θ and x as shown in the figure. Write θ as a function of x.



a. $\theta = \text{arccsc}\dfrac{x}{6}$

b. $\theta = \text{arccot}\dfrac{6}{x}$

c. $\theta = \arcsin\dfrac{x}{6}$

d. $\theta = \arctan\dfrac{6}{x}$

e. $\theta = \arctan\dfrac{x}{6}$

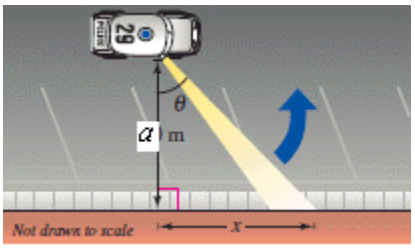
ANSWER: d
POINTS: 1
REFERENCES: 6.6.110a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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28. A security car with its spotlight on is parked $a = 30$ meters from a warehouse. Consider θ and x as shown in the figure. Write θ as a function of x.

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a. $\theta = \text{arccot}\,\frac{x}{30}$

b. $\theta = \arctan\,\frac{x}{30}$

c. $\theta = \text{arccsc}\,\frac{x}{30}$

d. $\theta = \arcsin\,\frac{x}{30}$

e. $\theta = \arctan\,\frac{30}{x}$

ANSWER: b
POINTS: 1
REFERENCES: 6.6.111a
QUESTION TYPE: Multi-Mode (Multiple choice)
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29. Find the value of the expression. Round your result to two decimal places.

arcsec 3.14

a. –1.25
b. 1.25
c. 1.89
d. 3.14
e. –3.14

ANSWER: b
POINTS: 1
REFERENCES: 6.6.127
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
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30. Find the value of the expression. Round your result to two decimal places.

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$\operatorname{arccot}\frac{7}{2}$

a. 0.28
b. 1.28
c. 1.29
d. –1.29
e. –0.28

ANSWER: a
POINTS: 1
REFERENCES: 6.6.131
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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31. Find the value of the expression. Round your result to two decimal places.

$\operatorname{arccsc}\left(-\frac{23}{6}\right)$

a. –1.32
b. 1.83
c. –0.26
d. –1.26
e. 0.74

ANSWER: c
POINTS: 1
REFERENCES: 6.6.133
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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32. Find the value of the expression. Round your result to two decimal places.

$\operatorname{arccsc}(-24)$

a. 1.61
b. 1.53
c. 0.04
d. 0.96

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e. –0.04

ANSWER: e
POINTS: 1
REFERENCES: 6.6.134
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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33. Evaluate $\arctan \frac{\sqrt{3}}{3}$ without using a calculator.

a. $\frac{\pi}{6}$
b. $-\frac{\pi}{6}$
c. $\frac{\pi}{4}$
d. $\frac{\pi}{3}$
e. $-\frac{3\pi}{4}$

ANSWER: a
POINTS: 1
REFERENCES: 6.6.7
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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34. Evaluate $\tan^{-1}\left(-\frac{\sqrt{3}}{3}\right)$ without using a calculator.

a. $-\frac{5\pi}{6}$
b. $-\frac{\pi}{6}$
c. $-\frac{\pi}{3}$
d. $\frac{3\pi}{4}$

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e. $-\frac{2\pi}{3}$

ANSWER: b
POINTS: 1
REFERENCES: 6.6.11
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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35. Use a calculator to evaluate $\arctan 0.95$. Round your answer to two decimal places.

a. 1.25
b. 0.58
c. 0.32
d. 1.40
e. 0.76

ANSWER: e
POINTS: 1
REFERENCES: 6.6.23
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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36. Use a calculator to evaluate $\cos^{-1}(-0.81)$. Round your answer to two decimal places.

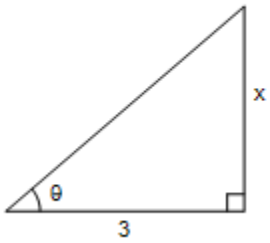
a. 0.68
b. -0.89
c. 0.72
d. -0.94
e. 2.51

ANSWER: e
POINTS: 1
REFERENCES: 6.6.37
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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37. Use an inverse function to write θ as a function of x.



a. $\theta = \arctan \dfrac{\sqrt{x^2 - 9}}{3}$

b. $\theta = \arctan \dfrac{3}{x}$

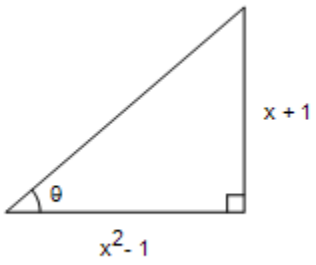
c. $\theta = \arctan \dfrac{3\pi}{x}$

d. $\theta = \arctan \dfrac{\sqrt{x^2 + 9}}{3}$

e. $\theta = \arctan \dfrac{x}{3}$

ANSWER: e
POINTS: 1
REFERENCES: 6.6.43
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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38. Use an inverse function to write θ as a function of x.



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a. $\theta = \tan^{-1}\left(\frac{1}{x-1}\right)$

b. $\theta = \tan^{-1}\left(\frac{x-1}{x+1}\right)$

c. $\theta = \tan^{-1}(x+1)$

d. $\theta = \tan^{-1}\left(\frac{1}{x^2+1}\right)$

e. $\theta = \tan^{-1}\left(\frac{1}{x+1}\right)$

ANSWER: a
POINTS: 1
REFERENCES: 6.6.44
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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DATE MODIFIED: 11/25/2014 7:40 AM

39. Use the properties of inverse trigonometric functions to evaluate $\tan[\arctan(-0.11)]$.

a. -0.55
b. 0.12
c. -0.41
d. -0.11
e. -0.07

ANSWER: d
POINTS: 1
REFERENCES: 6.6.50
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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DATE MODIFIED: 11/25/2014 7:52 AM

40. Use the properties of inverse trigonometric functions to evaluate $\arctan\left[\tan\left(\frac{2\pi}{5}\right)\right]$.

a. $\frac{\pi}{5}$
b. $\frac{2\pi}{3}$

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c. $\frac{5\pi}{2}$

d. $\frac{2\pi}{5}$

e. $-\frac{3\pi}{5}$

ANSWER: d
POINTS: 1
REFERENCES: 6.6.54
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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41. Find the exact value of $\sin\left[\arctan\frac{7}{24}\right]$.

a. $\frac{24}{7}$

b. $\frac{7}{24}$

c. $\frac{7}{32}$

d. $\frac{7}{25}$

e. $\frac{32}{25}$

ANSWER: d
POINTS: 1
REFERENCES: 6.6.60
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:24 PM
DATE MODIFIED: 11/25/2014 11:33 PM

42. Find the exact value of $\tan\left[\sin^{-1}\frac{5}{13}\right]$.

a. $\frac{1}{5}$

b. $\frac{17}{12}$

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c. $\frac{5}{13}$

d. $\frac{5}{12}$

e. $\frac{5}{17}$

ANSWER: d
POINTS: 1
REFERENCES: 6.6.65
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:24 PM
DATE MODIFIED: 11/25/2014 11:50 PM

43. Write an algebraic expression that is equivalent to $\sin\left(\arctan\frac{x}{2}\right)$.

a. $\frac{x\sqrt{x^2+4}}{x^2+4}$

b. $\frac{2\sqrt{x^2+4}}{x^2+4}$

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

d. $\frac{\sqrt{x^2+4}}{2}$

e. $\frac{\sqrt{x^2+4}}{x}$

ANSWER: a
POINTS: 1
REFERENCES: 6.6.74
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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44. Write an algebraic expression that is equivalent to $\tan(\arccos 3x)$.

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a. $\frac{\sqrt{1-9x^2}}{3x}$

b. $\sqrt{1-9x^2}$

c. $\frac{\sqrt{1-9x^2}}{1-9x^2}$

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

e. $3x$

ANSWER: a
POINTS: 1
REFERENCES: 6.6.71
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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DATE MODIFIED: 11/26/2014 12:08 AM

45. Which of the following can be inserted to make the statement true?

$\arccos\left(\frac{\sqrt{25-x^2}}{5}\right) = \arcsin(_____),\ 0 \le x \le 5$

a. $\frac{x^2}{5}$

b. $\frac{x}{5}$

c. $25-x^2$

d. $\frac{\sqrt{50-x^2}}{x}$

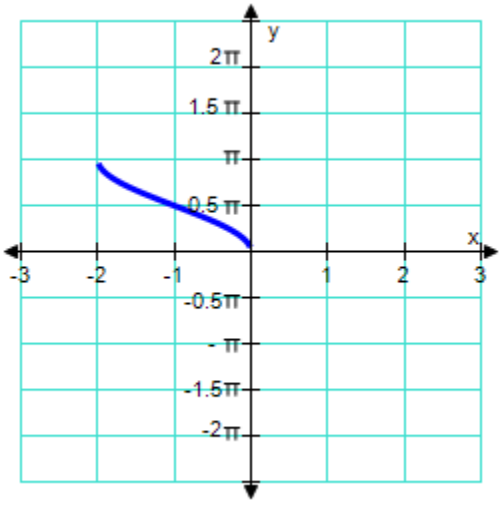
e. x

ANSWER: b
POINTS: 1
REFERENCES: 6.6.80
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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46. Which of the following functions is represented by the graph below?

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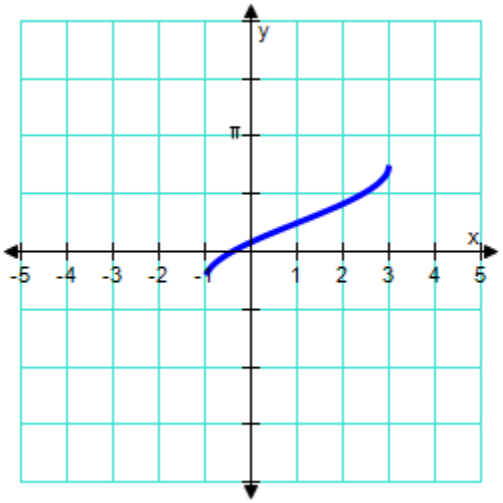
a. $2\arccos x$
b. $\arcsin 2x$
c. $\arccos (x + 1)$
d. $2\arcsin\frac{x}{2}$
e. $\arccos \frac{x}{2}$

ANSWER: c
POINTS: 1
REFERENCES: 6.6.86
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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47. Which of the following functions is represented by the graph below?

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a. $\arcsin\left(\frac{x-1}{2}\right)+\frac{\pi}{4}$

b. $2\arccos(x+1)$

c. $\arcsin(2x)$

d. $\arccos\left(\frac{x+1}{2}\right)$

e. $2\arcsin\frac{x}{2}-1$

ANSWER: a
POINTS: 1
REFERENCES: 6.6.88
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:24 PM
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48. Use a graphing utility to graph the function below.

$y=2\arcsin(2x)$

π

-1 1 $Y_{scl}=\frac{\pi}{4}$

$-\pi$

π

-1 1 $Y_{scl}=\frac{\pi}{4}$

$-\pi$

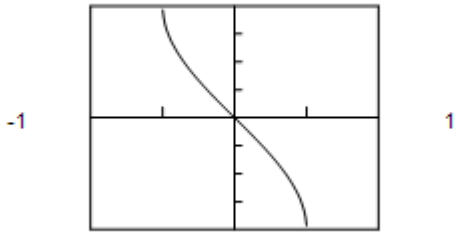
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Section 1.7 - Inverse Trigonometric Functions

a. π

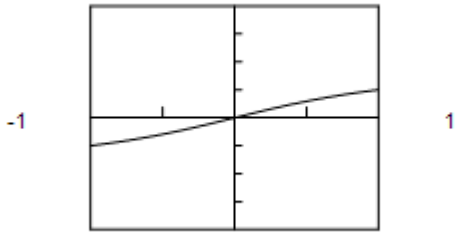
$Y_{scl} = \frac{\pi}{4}$



$-\pi$

b. π

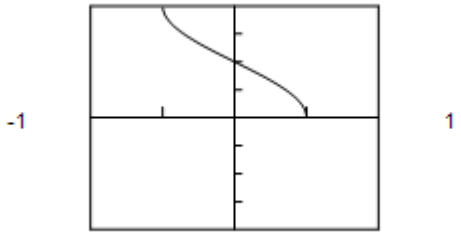
$Y_{scl} = \frac{\pi}{4}$



$-\pi$

c. π

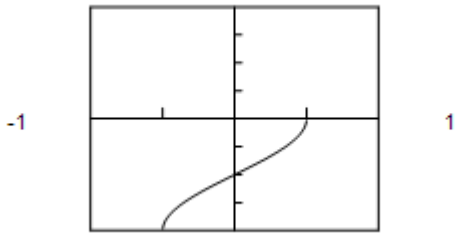
$Y_{scl} = \frac{\pi}{4}$



$-\pi$

d. π

$Y_{scl} = \frac{\pi}{4}$



$-\pi$

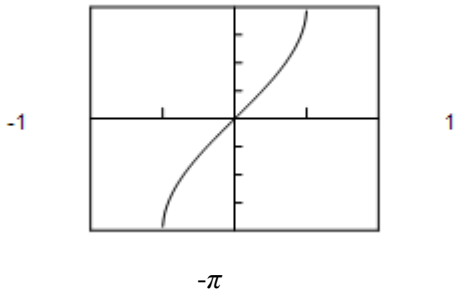
e. π

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Section 1.7 - Inverse Trigonometric Functions

$Y_{scl} = \frac{\pi}{4}$



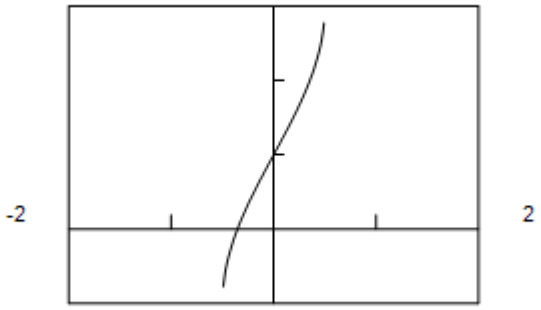
ANSWER: e
POINTS: 1
REFERENCES: 6.6.94
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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49. Use a graphing utility to graph the function below.

$y = 2\sin^{-1}(2x) + \frac{\pi}{2}$

a. $3\pi/2$

$Y_{scl} = \frac{\pi}{2}$

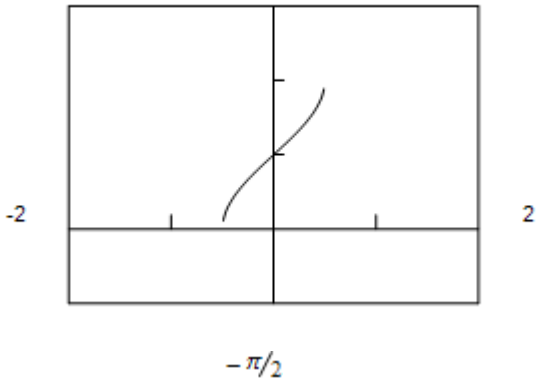


b. $3\pi/2$

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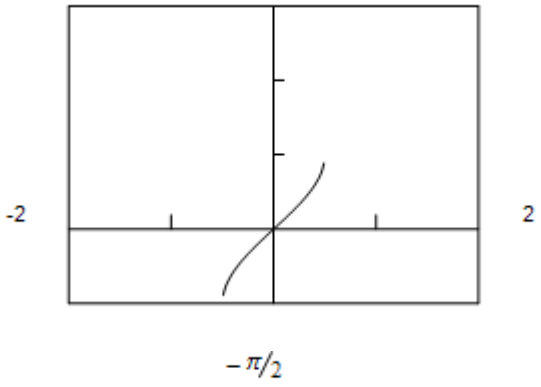
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$Y_{scl} = \frac{\pi}{2}$



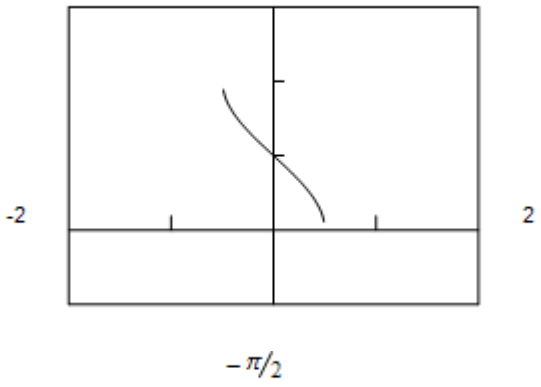
c.

$Y_{scl} = \frac{\pi}{2}$



d.

$Y_{scl} = \frac{\pi}{2}$



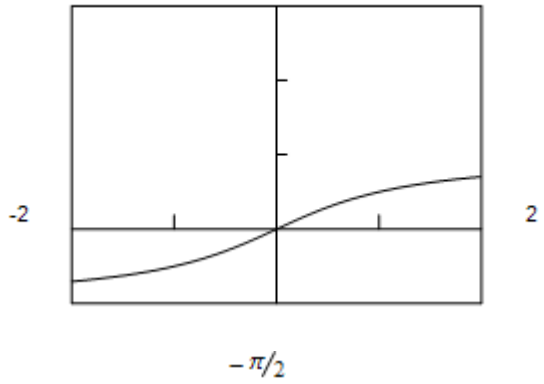
e.

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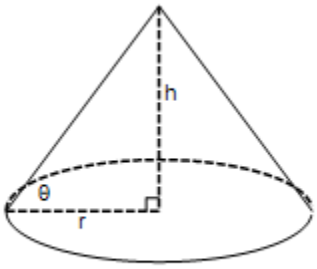
Section 1.7 - Inverse Trigonometric Functions

$Y_{scl} = \frac{\pi}{2}$



ANSWER: a
POINTS: 1
REFERENCES: 6.6.95
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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50. A granular substance such as sand naturally settles into a cone-shaped pile when poured from a small aperture. Its height depends on the humidity and adhesion between granules. The angle of elevation of a pile, θ, is called the *angle of repose*. If the height of a pile of sand is 14 feet and its diameter is approximately 47 feet, determine the angle of repose. Round your answer to the nearest degree.



a. 27°

b. 29°

c. 28°

d. 30°

e. 31°

ANSWER: e
POINTS: 1

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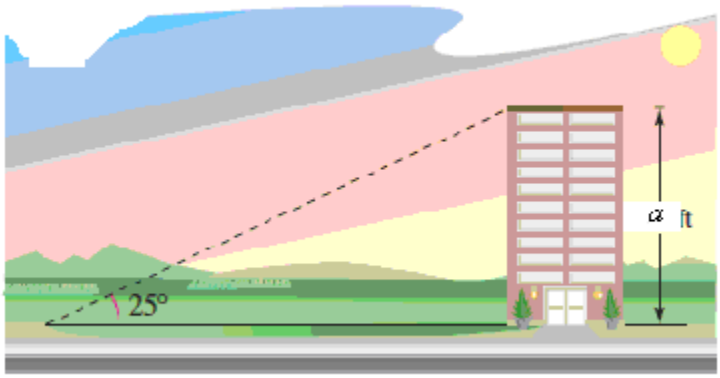
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HAS VARIABLES:	True
STUDENT ENTRY MODE:	Basic
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Section 1.8 - Applications and Models

1. The sun is 25º above the horizon. Find the length of a shadow cast by a building that is $\alpha = 130$ feet tall (see the figure). Approximate the answer to two decimal places.



a. 281.79 ft
b. 278.79 ft
c. 279.79 ft
d. 280.79 ft
e. 282.79 ft

ANSWER: b
POINTS: 1
REFERENCES: 6.7.19
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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2. The sun is 20º above the horizon. Find the length of a shadow cast by a park statue that is 30 feet tall. Approximate the answer to two decimal places.

a. 82.42 ft
b. 84.42 ft
c. 85.42 ft
d. 83.42 ft
e. 86.42 ft

ANSWER: a
POINTS: 1
REFERENCES: 6.7.20
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic

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Section 1.8 - Applications and Models

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3. A ladder 17 feet long leans against the side of a house. Find the height from the top of the ladder to the ground if the angle of elevation of the ladder is 80º. Approximate the answer to one decimal place.

a. 19.7 ft
b. 20.7 ft
c. 18.7 ft
d. 16.7 ft
e. 17.7 ft

ANSWER: d
POINTS: 1
REFERENCES: 6.7.21
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:24 PM
DATE MODIFIED: 11/25/2014 6:03 AM

4. The length of a shadow of a tree is 120 feet when the angle of elevation of the sun is 33º. Approximate the height of the tree. Approximate the answer to one decimal place.

a. 77.9 ft
b. 81.9 ft
c. 79.9 ft
d. 78.9 ft
e. 80.9 ft

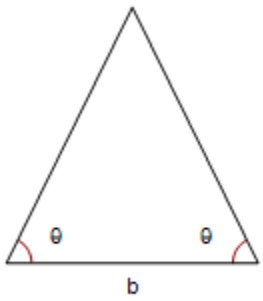
ANSWER: a
POINTS: 1
REFERENCES: 6.7.22
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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5. Find the height to the base *b* of the isosceles triangle shown in the figure. Round your answer to two decimal places if necessary.

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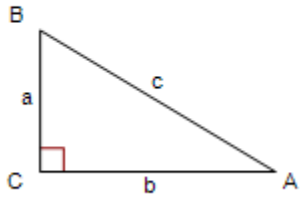


$\theta = 45°, b = 12$

a. 2
b. 12
c. 6
d. 24
e. 8

ANSWER: c
POINTS: 1
REFERENCES: 6.7.15
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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6. Solve the right triangle shown in the figure for all unknown sides and angles. Round your answers to two decimal places if necessary.



$A = 30°, b = 12$

a. $a \approx 13.86, c \approx 6.93, B = 60°$
b. $a \approx 0.59, c \approx 1.16, B = 60°$
c. $a \approx 6.93, c \approx 13.86, B = 60°$
d. $a \approx 6.93, c \approx 13.86, B = 45°$

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e. $a \approx 6.93,\ c \approx 13.86,\ B = 30°$

ANSWER: c
POINTS: 1
REFERENCES: 6.7.5
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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7. An engineer erects a 111-foot cellular telephone tower. Find the angle of elevation to the top of the tower at a point on level ground 62 feet from its base. Round your answer to one decimal place.

a. 60.8º
b. 64.8º
c. 63.8º
d. 61.8º
e. 62.8º

ANSWER: a
POINTS: 1
REFERENCES: 6.7.27
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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8. The height of an outdoor basketball backboard is $12\frac{1}{4}$ feet, and the backboard casts a shadow $17\frac{1}{2}$ feet long.
Find the angle of elevation of the sun. Round your answer to one decimal place.

a. 36.0º
b. 37.0º
c. 35.0º
d. 39.0º
e. 38.0º

ANSWER: c
POINTS: 1
REFERENCES: 6.7.28c
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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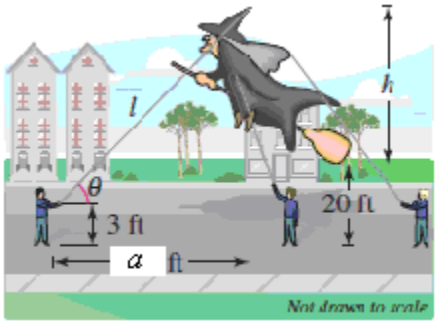
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Section 1.8 - Applications and Models

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9. You are holding one of the tethers attached to the top of a giant character balloon in a parade. Before the start of the parade the balloon is upright and the bottom is floating approximately 20 feet above ground level. You are standing approximately $a = 130$ feet ahead of the balloon (see the figure).



Find an expression for the angle of elevation from you to the top of the balloon.

a. $\theta = \arccos\left(\frac{130}{l}\right)$

b. $\theta = \arccos\left(\frac{l}{130}\right)$

c. $\theta = \arcsin\left(\frac{l}{h+17}\right)$

d. $\theta = \arcsin\left(\frac{h+20}{l}\right)$

e. $\theta = \arctan\left(\frac{130}{h+20}\right)$

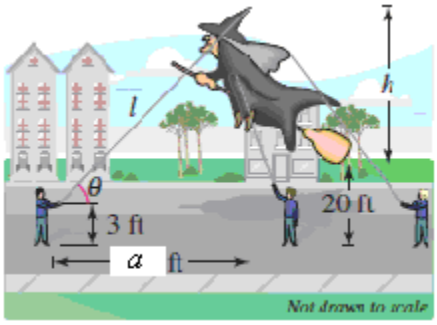
ANSWER: a
POINTS: 1
REFERENCES: 6.7.31b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:24 PM
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10. You are holding one of the tethers attached to the top of a giant character balloon in a parade. Before the start of the parade the balloon is upright and the bottom is floating approximately 20 feet above ground level. You are standing approximately $a = 100$ feet ahead of the balloon (see the figure). Round your answer to two decimal places.

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Section 1.8 - Applications and Models



Find the height h of the balloon if the angle of elevation to the top of the balloon is 35º.

a. 55.02 ft
b. 56.02 ft
c. 53.02 ft
d. 57.02 ft
e. 54.02 ft

ANSWER: c
POINTS: 1
REFERENCES: 6.7.31c
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:24 PM
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11. For the simple harmonic motion described by the trigonometric function, find the least positive value of t for which $d = 0$.

$$d = \frac{1}{64}\sin 794\pi t$$

a. 64
b. $\frac{1}{794}$
c. 794
d. $\frac{1}{64}$
e. $\frac{1}{1{,}584}$

ANSWER: b
POINTS: 1
REFERENCES: 6.7.60d
QUESTION TYPE: Multi-Mode (Multiple choice)

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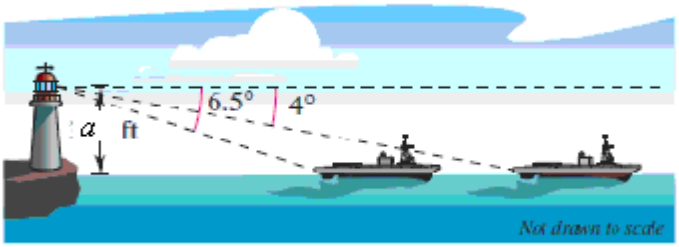
12. For the simple harmonic motion described by the trigonometric function, find the least positive value of t for which $d = 0$.

$$d = \frac{1}{12}\sin 14\pi t$$

a. $\frac{1}{14}$
b. $\frac{1}{12}$
c. 12
d. $\frac{1}{6}$
e. 14

ANSWER: a
POINTS: 1
REFERENCES: 6.7.59d
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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13. An observer in a lighthouse a = 340 feet above sea level observes two ships directly offshore. The angles of depression to the ships are 4º and 6.5º (see the figure). How far apart are the ships? Round your answer to one decimal place.



a. 1878.1 ft
b. 1879.1 ft
c. 1880.1 ft
d. 1881.1 ft

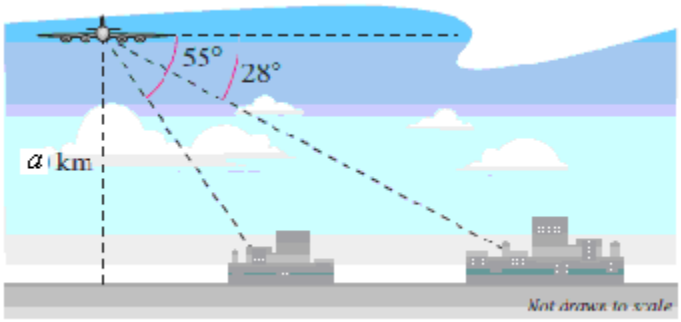
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e. 1882.1 ft

ANSWER: a
POINTS: 1
REFERENCES: 6.7.24
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:24 PM
DATE MODIFIED: 6/4/2021 10:05 AM

14. A passenger in an airplane at an altitude of $a = 20$ kilometers sees two towns directly to the east of the plane. The angles of depression to the towns are 28º and 55º (see the figure). How far apart are the towns? How far apart are the ships? Round your answer to one decimal place.



a. 23.6 km
b. 24.6 km
c. 25.6 km
d. 26.6 km
e. 27.6 km

ANSWER: a
POINTS: 1
REFERENCES: 6.7.25
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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15. A cellular telephone tower that is 150 feet tall is placed on top of a mountain that is 1200 feet above sea level. What is the angle of depression from the top of the tower to a cell phone user who is 6 horizontal miles away and 400 feet above sea level? Round your answer to two decimal places.

a. 3.72º
b. 1.72º

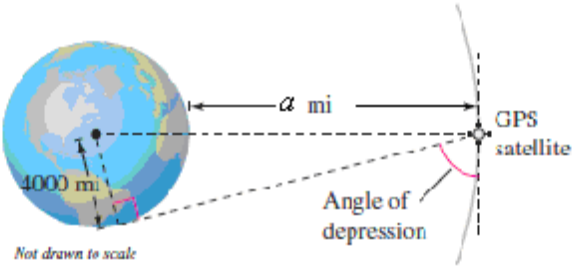
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c. 5.72º
d. 4.72º
e. 2.72º

ANSWER: b
POINTS: 1
REFERENCES: 6.7.29
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:24 PM
DATE MODIFIED: 11/26/2014 1:30 AM

16. A Global Positioning System satellite orbits a = 12,600 miles above Earth's surface (see the figure). Find the angle of depression from the satellite to the horizon. Assume the radius of Earth is 4000 miles. Round your answer to two decimal places.



a. 72.49º
b. 73.49º
c. 74.49º
d. 71.49º
e. 75.49º

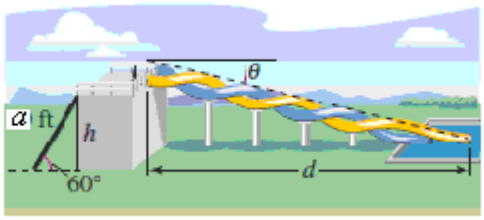
ANSWER: d
POINTS: 1
REFERENCES: 6.7.30
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:24 PM
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17. The designers of a water park are creating a new slide and have sketched some preliminary drawings. The length of the ladder is a = 24 feet, and its angle of elevation is 60º (see the figure).

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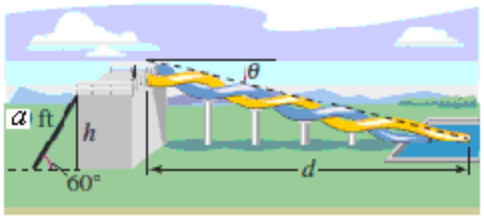


Find the height of the slide. Round your answer to two decimal places.

a. About 21.78 ft
b. About 22.78 ft
c. About 23.78 ft
d. About 20.78 ft
e. About 24.78 ft

ANSWER: d
POINTS: 1
REFERENCES: 6.7.32a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:24 PM
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18. The designers of a water park are creating a new slide and have sketched some preliminary drawings. The length of the ladder is $a = 26$ feet, and its angle of elevation is 60° (see the figure).



Find the angle of depression θ from the top of the slide to the end of the slide at the ground in terms of the horizontal distance d the rider travels.

a. $\theta = \arctan\left(\frac{22.52}{d}\right)$

b. $\theta = \arctan\left(\frac{23.52}{d}\right)$

c. $\theta = \arctan\left(\frac{24.52}{d}\right)$

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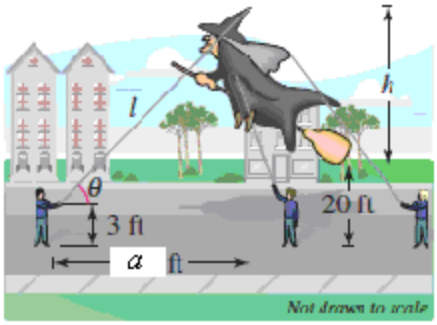
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d. $\theta = \arctan\left(\frac{25.52}{d}\right)$

e. $\theta = \arctan\left(\frac{26.52}{d}\right)$

ANSWER: a
POINTS: 1
REFERENCES: 6.7.32b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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19. You are holding one of the tethers attached to the top of a giant character balloon in a parade. Before the start of the parade the balloon is upright and the bottom is floating approximately 20 feet above ground level. You are standing approximately a = 130 feet ahead of the balloon (see the figure).



Find the length l of the tether you are holding in terms of h, the height h of the balloon from top to bottom.

a. $\sqrt{h^2 + 34h + 17{,}189}$

b. $\sqrt{h^2 + 17h + 17{,}189}$

c. $\sqrt{h^2 + 20h + 689}$

d. $\sqrt{h^2 + 40h + 689}$

e. $\sqrt{h^2 + 34h + 289}$

ANSWER: a
POINTS: 1
REFERENCES: 6.7.31a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic

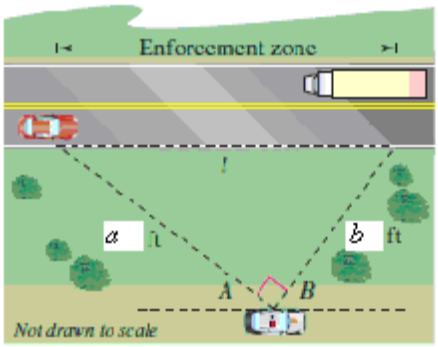
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20. A police department has set up a speed enforcement zone on a straight length of highway. A patrol car is parked parallel to the zone, $a = 210$ feet from one end and $b = 130$ feet from the other end (see the figure).



Find the length l of the zone. Round your answer to two decimal places.

a. 286.98 ft
b. 276.98 ft
c. 266.98 ft
d. 246.98 ft
e. 256.98 ft

ANSWER: d
POINTS: 1
REFERENCES: 6.7.33a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:24 PM
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21. Find the angle α between two nonvertical lines L_1 and L_2. The angle α satisfies the equation

$$\tan \alpha = \left| \frac{m_2 - m_1}{1 + m_2 m_1} \right|$$

where m_1 and m_2 are slopes of L_1 and L_2, respectively.
(Assume that $m_1 m_2 \neq 1$.)

L_1: $5x - 4y = 5$
L_2: $x + y = 1$

Round your answer to one decimal place.

a. 83.7°

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b. 84.7°
c. 85.7°
d. 86.7°
e. 87.7°

ANSWER: a
POINTS: 1
REFERENCES: 6.7.43
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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22. Find the angle α between two nonvertical lines L_1 and L_2. The angle α satisfies the equation

$$\tan \alpha = \left| \frac{m_2 - m_1}{1 + m_2 m_1} \right|$$

where m_1 and m_2 are slopes of L_1 and L_2, respectively.
(Assume that $m_1 m_2 \neq 1$.)

$L_1: 2x - y = 8$
$L_2: x - 5y = -4$

Round your answer to one decimal place.

a. 54.1°
b. 53.1°
c. 55.1°
d. 52.1°
e. 56.1°

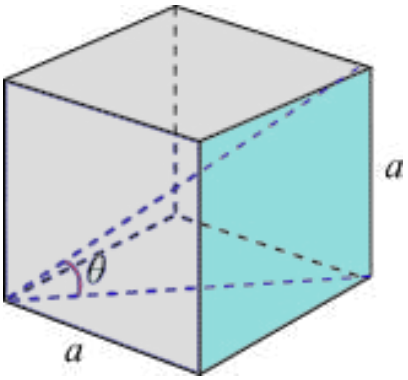
ANSWER: d
POINTS: 1
REFERENCES: 6.7.44
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:24 PM
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23. Determine the angle between the diagonal of a cube and the diagonal of its base, as shown in the figure, where $a = 12$. Round your answer to one decimal place.

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a. 38.3^{o}

b. 36.3^{o}

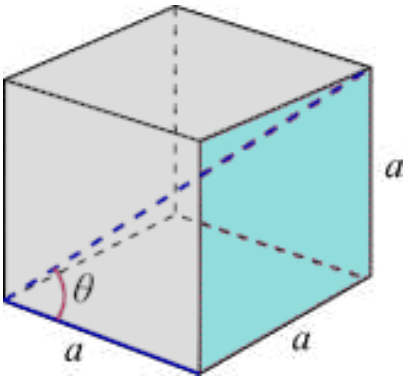
c. 39.3^{o}

d. 35.3^{o}

e. 37.3^{o}

ANSWER: d
POINTS: 1
REFERENCES: 6.7.45
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:24 PM
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24. Determine the angle between the diagonal of a cube and its edge, as shown in the figure, where $a = 12$. Round your answer to one decimal place.



a. 56.7^{o}

b. 57.7^{o}

c. 55.7^{o}

d. 54.7^{o}

e. 58.7^{o}

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ANSWER: d
POINTS: 1
REFERENCES: 6.7.46
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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25. Find the length of the sides of a regular pentagon inscribed in a circle of radius 26 inches. Round your answer to one decimal place.

a. 31.6 in.
b. 33.6 in.
c. 30.6 in.
d. 32.6 in.
e. 34.6 in.

ANSWER: c
POINTS: 1
REFERENCES: 6.7.47
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:24 PM
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26. Find the length of the sides of a regular hexagon inscribed in a circle of radius 29 inches.

a. 30 in.
b. 31 in.
c. 32 in.
d. 33 in.
e. 29 in.

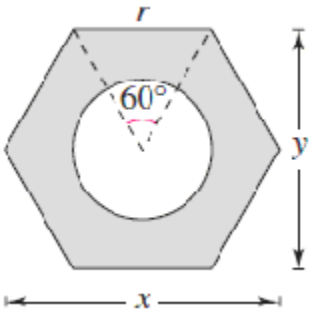
ANSWER: e
POINTS: 1
REFERENCES: 6.7.48
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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27. Find the distance y across the flat sides of a hexagonal nut (see the figure).
$r = 14$ cm

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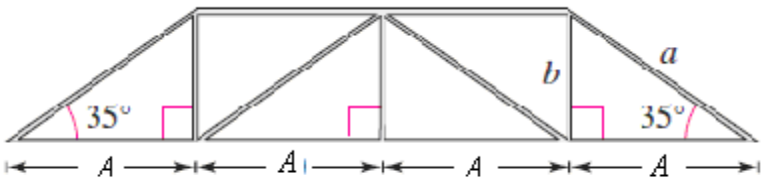
Round your answer to two decimal places.



a. $y = 28.25$ cm
b. $y = 24.25$ cm
c. $y = 27.25$ cm
d. $y = 26.25$ cm
e. $y = 25.25$ cm

ANSWER: b
POINTS: 1
REFERENCES: 6.7.49
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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28. Find the lengths of all the unknown members of the truss. Round your answer to one decimal place.



$A = 30$

a. $b \approx 22.0, a \approx 37.6$
b. $b \approx 21.0, a \approx 36.6$
c. $b \approx 24.0, a \approx 39.6$
d. $b \approx 36.6, a \approx 21.0$
e. $b \approx 23.0, a \approx 38.6$

ANSWER: b

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POINTS: 1
REFERENCES: 6.7.51
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:24 PM
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29. Find a model for simple harmonic motion satisfying the specified conditions.

Displacement ($t = 0$): 0
Amplitude: *5* centimeters
Period: 2 seconds

a. $d = 5\cos(2\pi t)$

b. $d = 5\sin\left(\frac{\pi t}{2}\right)$

c. $d = 5\sin(\pi t)$

d. $d = 2\sin(\pi t)$

e. $d = 5\sin(2\pi t)$

ANSWER: c
POINTS: 1
REFERENCES: 6.7.53
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
DATE CREATED: 6/10/2014 4:24 PM
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30. Find a model for simple harmonic motion satisfying the specified conditions.

Displacement ($t = 0$): 0
Amplitude: *5* meters
Period: *10* seconds

a. $d = 5\sin\left(\frac{\pi t}{5}\right)$

b. $d = 5\sin(2\pi t)$

c. $d = 5\sin\left(\frac{\pi t}{12}\right)$

d. $d = 10\sin(\pi t)$

e. $d = 5\cos(2\pi t)$

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ANSWER: a
POINTS: 1
REFERENCES: 6.7.54
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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31. For the simple harmonic motion described by the trigonometric function, find the maximum displacement.

$$d = 8 \cos \frac{6\pi}{5} t$$

a. 5
b. $\frac{6}{5}$
c. 8
d. $\frac{1}{8}$
e. $\frac{5}{6}$

ANSWER: c
POINTS: 1
REFERENCES: 6.7.57a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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32. For the simple harmonic motion described by the trigonometric function, find the maximum value of d when

$$d = 6 \cos \frac{6\pi}{5} t$$

Round your answer to nearest whole number.

a. 1
b. 10
c. 6
d. 5
e. 0

ANSWER: c
POINTS: 1

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REFERENCES: 6.7.57c
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HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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33. For the simple harmonic motion described by the trigonometric function, find the frequency per second.

$d = 9 \cos \frac{8\pi}{5} t$

a. $\frac{4}{5}$

b. $\frac{8\pi}{5}$

c. $\frac{5}{4}$

d. $\frac{5\pi}{8}$

e. $\frac{5}{8}$

ANSWER: a
POINTS: 1
REFERENCES: 6.7.57b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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34. For the simple harmonic motion described by the trigonometric function, find the least positive value of t for which $d = 0$.

$d = 6 \cos \frac{6\pi}{5} t$

a. $\frac{12}{5}$

b. $\frac{5}{12}$

c. $\frac{5}{6}$

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d. $\frac{6}{5}$

e. $\frac{1}{6}$

ANSWER: b
POINTS: 1
REFERENCES: 6.7.57d
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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35. For the simple harmonic motion described by the trigonometric function, find the maximum displacement.

$d = \frac{1}{4}\cos 20\pi t$

a. $\frac{1}{20}$

b. $\frac{20}{4}$

c. $\frac{1}{4}$

d. $\frac{4}{20}$

e. 20

ANSWER: c
POINTS: 1
REFERENCES: 6.7.58a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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36. For the simple harmonic motion described by the trigonometric function, find the frequency per second.

$d = \frac{1}{16}\cos 12\pi t$

a. 16

b. π

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c. 12
d. 2π
e. 6

ANSWER: e
POINTS: 1
REFERENCES: 6.7.58b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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37. For the simple harmonic motion described by the trigonometric function, find the maximum displacement.

$$d = \frac{1}{2}\sin 6\pi t$$

a. 6
b. $\frac{1}{2}$
c. 12
d. $\frac{1}{6}$
e. 2

ANSWER: b
POINTS: 1
REFERENCES: 6.7.59a
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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38. For the simple harmonic motion described by the trigonometric function, find the frequency per second.

$$d = \frac{1}{4}\sin 6\pi t$$

a. 3
b. 6
c. 3π
d. 6π
e. 2π

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ANSWER:	a
POINTS:	1
REFERENCES:	6.7.59b
QUESTION TYPE:	Multi-Mode (Multiple choice)
HAS VARIABLES:	True
STUDENT ENTRY MODE:	Basic
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39. A point on the end of a tuning fork moves in simple harmonic motion described by

$d = a\sin\ \omega t$

Find ω given that the tuning fork for middle C has a frequency 270 of vibrations per second.

a. $\omega = 270\pi$

b. $\omega = 810\pi$

c. $\omega = 540\pi$

d. $\omega = 1080\pi$

e. $\omega = 271\pi$

ANSWER:	c
POINTS:	1
REFERENCES:	6.7.61
QUESTION TYPE:	Multi-Mode (Multiple choice)
HAS VARIABLES:	True
STUDENT ENTRY MODE:	Basic
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40. A ball that is bobbing up and down on the end of a spring has a maximum displacement of 3 inches. Its motion (in ideal conditions) is modeled by

$$y = \frac{1}{4}\cos 18t\ (t > 0),$$

where y is measured in feet and t is the time in seconds.
What is the period of the oscillations?

a. $\frac{9}{\pi}$

b. $\frac{18}{\pi}$

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c. $\frac{\pi}{18}$

d. $\frac{\pi}{2}$

e. $\frac{\pi}{9}$

ANSWER: e
POINTS: 1
REFERENCES: 6.7.63b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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41. Determine whether the statement is true or false.

N 24 E means 30 degrees north of east.

a. True

b. False

ANSWER: b
POINTS: 1
REFERENCES: 6.7.70
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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42. Determine whether the statement is true or false.

The Leaning Tower of Pisa is not vertical, but if you know the angle of elevation θ to the top of the tower when you stand 20 feet away from it, you can find its height h using the formula

$h = 20 \tan \theta$

a. False

b. True

ANSWER: a
POINTS: 1
REFERENCES: 6.7.69
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
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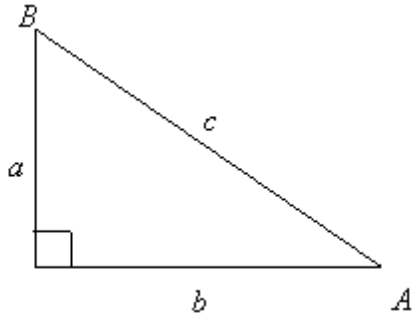
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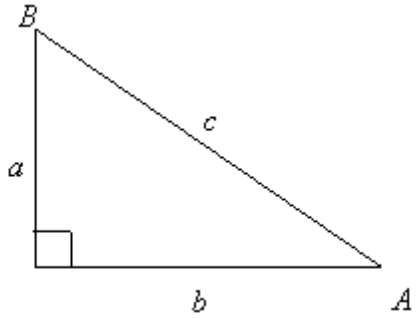
43. If $B = 27^o$ and $a = 7$, determine the value of b. Round to two decimal places.



a. 6.24
b. 3.18
c. 3.57
d. 7.86
e. 13.74

ANSWER: c
POINTS: 1
REFERENCES: 6.7.7
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.253 - Find a third triangle given two pieces
DATE CREATED: 6/10/2014 4:24 PM
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44. If $a = 11$ and $c = 28$, determine the value of B. Round to two decimal places.



a. 68.55^o

b. 66.87^o

c. 28.13^o

d. 21.45^o

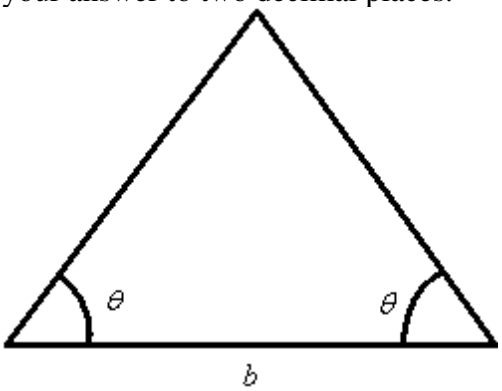
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e. 23.13^{o}

ANSWER: b
POINTS: 1
REFERENCES: 6.7.10
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.253 - Find a third triangle given two pieces
DATE CREATED: 6/10/2014 4:24 PM
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45. Find the height to the base of the isosceles triangle shown below if $\theta = 38^{o}$ and $b = 8$ centimeters. Round your answer to two decimal places.



a. 5.12 centimeters
b. 6.25 centimeters
c. 3.13 centimeters
d. 2.46 centimeters
e. 1.38 centimeters

ANSWER: c
POINTS: 1
REFERENCES: 6.7.15
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.254 - Find altitude of isosceles triangle given two parts of the triangle
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46. The angle of elevation of the sun is 26^{o}. Find the length, l, of a shadow cast by a tree that is 38 feet tall. Round your answer to two decimal places.

a. $l = 68.96$ feet

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b. $l = 86.68$ feet
c. $l = 42.28$ feet
d. $l = 49.48$ feet
e. $l = 77.91$ feet

ANSWER: e
POINTS: 1
REFERENCES: 6.7.19
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.255 - Application: Angle of elevation
DATE CREATED: 6/10/2014 4:24 PM
DATE MODIFIED: 4/13/2015 5:17 AM

47. After leaving the runway, a plane's angle of ascent is 17^o and its speed is 280 feet per second. How many minutes will it take for the airplane to climb to a height of 11,000 feet? Round your answer to two decimal places.

a. 1.72 minutes
b. 1.19 minutes
c. 2.24 minutes
d. 0.65 minutes
e. 0.68 minutes

ANSWER: c
POINTS: 1
REFERENCES: 6.7.34b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.256 - Application: Angle of ascent
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DATE MODIFIED: 4/13/2015 5:35 AM

48. A plane is 52 miles west and 46 miles north of an airport. The pilot wants to fly directly to the airport. What bearing should the pilot take? Answer should be given in degrees and minutes.

a. $131^o30'$
b. $129^o27'$
c. $132^o32'$
d. $48^o30'$
e. $134^o29'$

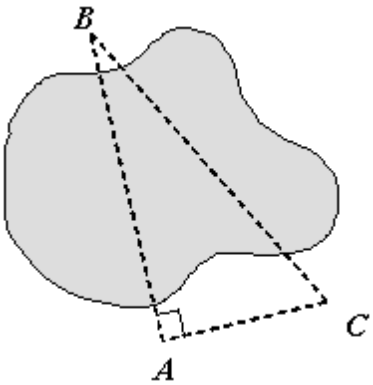
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Section 1.8 - Applications and Models

ANSWER: a
POINTS: 1
REFERENCES: 6.7.36b
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.257 - Find bearings
DATE CREATED: 6/10/2014 4:24 PM
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49. A land developer wants to find the distance across a small lake in the middle of his proposed development. The bearing from A to B is $\text{N } 31^o\text{W}$. The developer leaves point A and travels 74 yards perpendicular to $\overline{AB}$ to point C. The bearing from C to point B is $\text{N } 59^o\text{W}$. Determine the distance, AB, across the small lake. Round distance to nearest yard.



a. 169 yards
b. 114 yards
c. 139 yards
d. 154 yards
e. 121 yards

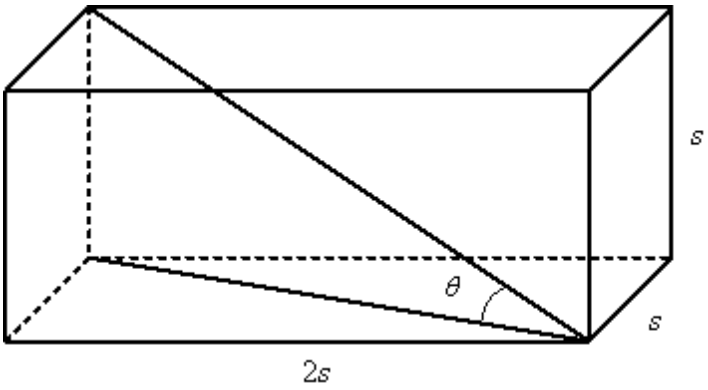
ANSWER: c
POINTS: 1
REFERENCES: 6.7.41
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.258 - Find distance using surveying bearings
DATE CREATED: 6/10/2014 4:24 PM
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50. If the sides of a rectangular solid are as shown, and $s = 4$, determine the angle, θ, between the diagonal of the base of the solid and the diagonal of the solid. Round answer to two decimal places.

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Section 1.8 - Applications and Models



a. 21.91^{o}

b. 24.09^{o}

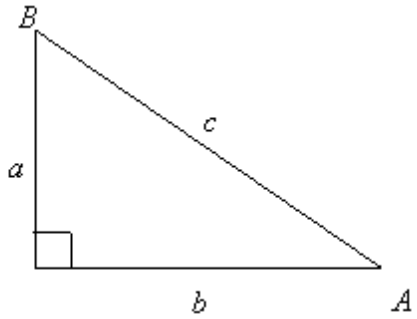
c. 17.21^{o}

d. 26.28^{o}

e. 19.86^{o}

ANSWER: b
POINTS: 1
REFERENCES: 6.7.45
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.259 - Angle inside a solid using Pythagorean theorem and arctan
DATE CREATED: 6/10/2014 4:24 PM
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51. If $a = 12$ and $c = 18$, determine the value of A. Round to two decimal places.



a. 48.19^{o}

b. 56.31^{o}

c. 33.69^{o}

d. 41.81^{o}

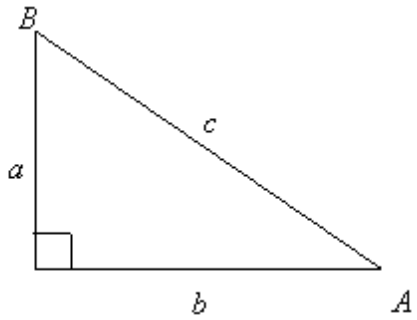
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e. 53.19^{o}

ANSWER: d
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.253 - Find a third triangle given two pieces
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52. If $B = 31^{o}$ and $a = 7$, determine the value of c. Round to two decimal places.



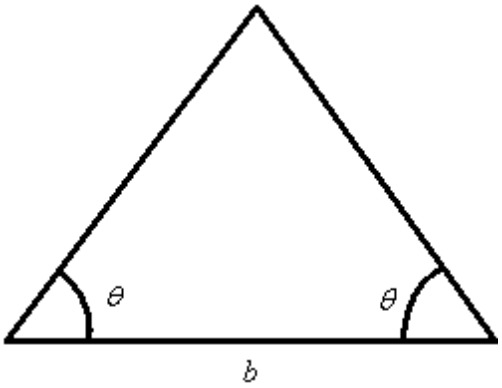
a. 8.17
b. 11.65
c. 13.59
d. 4.21
e. 3.61

ANSWER: a
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.253 - Find a third triangle given two pieces
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53. Find the height to the base of the isosceles triangle shown below if $\theta = 53^{o}$ and $b = 25$ meters. Round answer to two decimal places.

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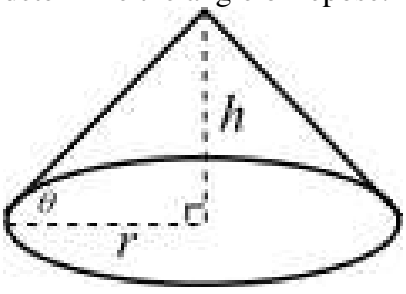
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a. 33.18 meters
b. 6.23 meters
c. 9.98 meters
d. 16.59 meters
e. 9.42 meters

ANSWER: d
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.254 - Find altitude of isosceles triangle given two parts of the triangle
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54. A granular substance such as sand naturally settles into a cone-shaped pile when poured from a small aperture. Its height depends on the humidity and adhesion between granules. The angle of elevation of a pile, θ, is called the angle of repose. If the height of a pile of sand is 11 feet and its diameter is approximately 34 feet, determine the angle of repose. Round answer to nearest degree.



a. 29^{o}

b. 30^{o}
c. 31^{o}
d. 32^{o}
e. 33^{o}

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Section 1.8 - Applications and Models

ANSWER: e
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.252 - Use inverse functions to solve for theta
DATE CREATED: 6/10/2014 4:24 PM
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55. After leaving the runway, a plane's angle of ascent is 17^{o} and its speed is 278 feet per second. How many minutes will it take for the airplane to climb to a height of 11,500 feet? Round answer to two decimal places.

a. 0.69 minutes
b. 2.36 minutes
c. 0.72 minutes
d. 1.25 minutes
e. 1.81 minutes

ANSWER: b
POINTS: 1
QUESTION TYPE: Multi-Mode (Multiple choice)
HAS VARIABLES: True
STUDENT ENTRY MODE: Basic
LEARNING OBJECTIVES: PREC.LARS.16.256 - Application: Angle of ascent
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