Elementary and Intermediate Algebra 6th edition Tussy Test Bank

SKU: 9798214000466-TEST-BANK

Name:_____ Class:_____ Date:_____

Section 1.1: Introducing the Language of Algebra

1. Raul has an adjusted income of $153,850, is married, and files jointly. Compute his tax.

Revised 2003 Tax Rate Schedules					
	If TAXABLE INCOME	The TAX is			
	Is Over	But Not Over	This Amount	Plus This %	Of the Excess Over
SCHEDULE Y-1 -					
Married Filing Jointly or Qualifying Widow(er)	$0	$14,000	$0.00	10%	$0.00
	$14,000	$56,800	$1,400.00	15%	$14,000
	$56,800	$114,650	$7,820.00	25%	$56,800
	$114,650	$174,700	$22,282.50	28%	$114,650
	$174,700	$311,950	$39,096.50	33%	$174,700
	$311,950	-	$84,389.00	35%	$311,950

a. $32,082.50
b. $10,976.00
c. $33,258.50
d. $22,282.50
e. $22,377.50

ANSWER: c

2. Use the data in the table to make a line graph showing the average acreage (in acres) of U.S. farms for the years 1950 through 1990.

Year	Number of U.S. farms (in millions)	Average size of U.S. farms (acres)
1950	5.6	214
1960	4.0	330
1970	2.9	399
1980	2.4	441
1990	2.1	478
2000	2.2	439

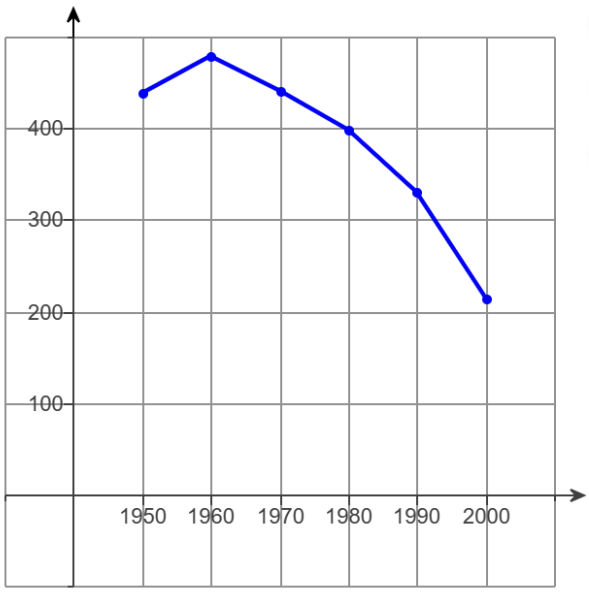
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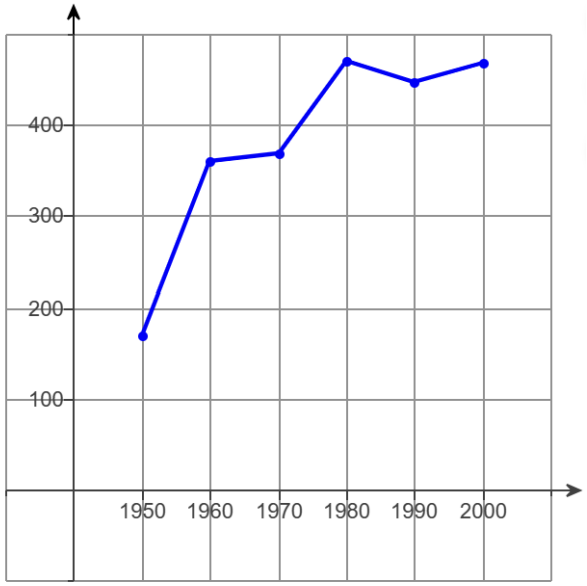
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Section 1.1: Introducing the Language of Algebra

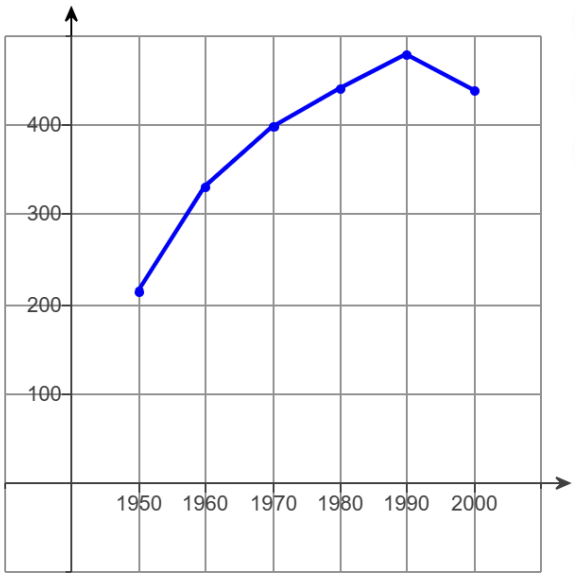
a.



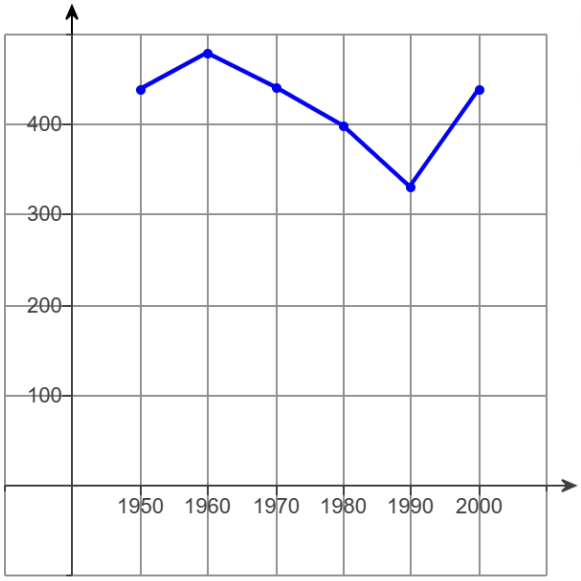
b.



c.



d.

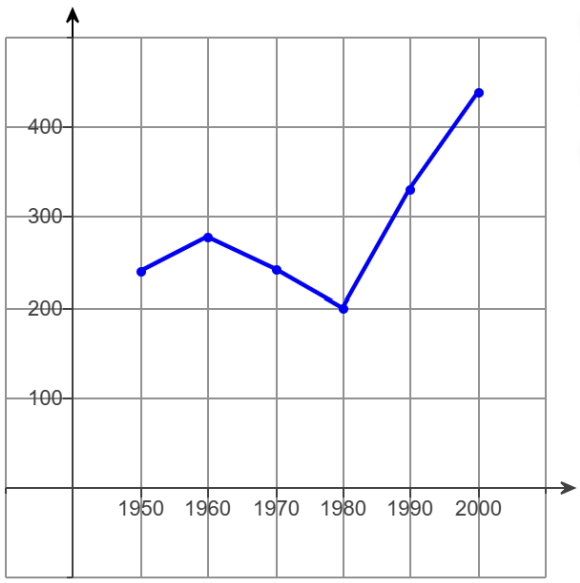


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Section 1.1: Introducing the Language of Algebra

e.



ANSWER: c

3. Write the algebraic expression as a phrase.

$$\frac{3x}{y-z}$$

a. The quotient obtained when the cube of x is divided by the difference of y and z.
b. The quotient obtained when the cube of x is divided by the sum of y and z.
c. The quotient obtained when the product of x and 3 is divided by the sum of y and z.
d. The quotient obtained when the product of x and 3 is divided by the difference of y and z.
e. The product obtained when the product of x and 3 is divided by the difference of y and z.

ANSWER: d

4. Fill in the blanks to write the algebraic expression as a phrase.

$$\frac{3x}{y+z}$$

The _____(product/quotient/sum/difference) obtained when the _____(product of x and 3/quotient of x and 3/cube of x) is divided by the _____(product of y and z/quotient of y and z/sum of y and z/difference of y and z).
ANSWER: quotient; product of x and 3; sum of y and z

5. Express the fact in words.

$35 + 12 = 47$

35 _____ (plus *or* equals) 12 _____ (plus *or* equals) _____ (35 *or* 12 *or* 47)
ANSWER: plus; equals; 47

6. Write the following statement as a mathematical expression.

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Section 1.1: Introducing the Language of Algebra

Eight is less than thirty-two.

a. $8 \geq 32$
b. $8 = 32$
c. $8 \leq 32$
d. $8 < 32$
e. $8 > 32$

ANSWER: d

7. In the equation $r = 15t$, r represents the distance traveled by a cyclist in miles, and t represents the time spent cycling in hours. Use this equation to find the distance traveled by the cyclist during cycling sessions of 2 hours and 4 hours. Present the results in a table.

Select the correct answer.

a.

t (hours)	r (miles)
2	30
4	60

b.

t (hours)	r (miles)
2	17
4	19

c.

t (hours)	r (miles)
30	2
60	4

d.

t (hours)	r (miles)
17	2
19	4

e.

t (hours)	r (miles)
2	2
4	4

ANSWER: a

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Section 1.2: Fractions

1. Find the prime factorization of the number.

90

a. $3 \cdot 3 \cdot 2 \cdot 5$
b. $9 \cdot 2 \cdot 5$
c. $3 \cdot 2 \cdot 5$
d. $3 \cdot 2 \cdot 5 \cdot 5$
e. $3 \cdot 3 \cdot 2$

ANSWER: a

2. Find the prime factorization of the number.

72

a. $4^2 \cdot 3^2$
b. $5^2 \cdot 2^5 \cdot 3^2$
c. $2^3 \cdot 3^2$
d. $2^2 \cdot 3^3$
e. $2^3 \cdot 3^3$

ANSWER: c

3. Find the prime factorization of the number.

968

a. $2^2 \cdot 3^3$
b. $4^2 \cdot 3^2$
c. $2^3 \cdot 5$
d. $2^3 \cdot 9$
e. $2^3 \cdot 11^2$

ANSWER: e

4. Find the prime factored form of the number.

357

a. $3 \cdot 7 \cdot 17$
b. $51 \cdot 17$
c. $3 \cdot 7 \cdot 7$
d. $21 \cdot 7$
e. $3 \cdot 7 \cdot 19$

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Section 1.2: Fractions

ANSWER: a

5. Find the prime factored form of the number.

175

a. $5^2 \cdot 7$
b. $5^3 \cdot 7$
c. $25 \cdot 7$
d. $25^2 \cdot 7$

ANSWER: a

6. If a natural number is written as the product of prime factors, we say that it is written in _____ form.

a. prime-standard
b. prime-factored
c. prime-polynomial
d. prime-number

ANSWER: b

7. Use the divisibility rules to help determine the prime factorization of the following number.

34

a. $3 \cdot 17$
b. $4 \cdot 17$
c. $2 \cdot 16$
d. $2 \cdot 17$
e. $1 \cdot 34$

ANSWER: d

8. Find the prime factorization of the number.

140

a. $2 \cdot 2 \cdot 5 \cdot 7$
b. $4 \cdot 5 \cdot 7$
c. $2 \cdot 5 \cdot 7$
d. $2 \cdot 5 \cdot 7 \cdot 7$
e. $2 \cdot 2 \cdot 5$

ANSWER: a

9. Find the prime factorization of the number.

432

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Section 1.2: Fractions

a. $4^3 \cdot 3^3$

b. $5^2 \cdot 2^6 \cdot 3^3$

c. $2^4 \cdot 3^3$

d. $2^3 \cdot 3^4$

e. $2^4 \cdot 3^4$

ANSWER: c

10. Find the prime factorization of the number.

968

a. $2^2 \cdot 3^3$

b. $4^4 \cdot 3^2$

c. $2^3 \cdot 5$

d. $2^3 \cdot 9$

e. $2^3 \cdot 11^2$

ANSWER: e

11. The denominators for three fractions, in prime-factored form, are $3 \cdot 7$, $2 \cdot 3$, and $3 \cdot 3$. Find the LCD for the fractions.

a. 126
b. 84
c. 42
d. 7
e. 21

ANSWER: a

12. Find the prime factorization of the number.
525

a. $5 \cdot 5 \cdot 3 \cdot 7$
b. $25 \cdot 3 \cdot 7$
c. $5 \cdot 3 \cdot 7$
d. $5 \cdot 3 \cdot 7 \cdot 7$
e. $5 \cdot 5 \cdot 3$

ANSWER: a

13. Write the number as a fraction.

-19

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Section 1.2: Fractions

a. $\frac{19}{1}$

b. $-\frac{1}{19}$

c. $\frac{1}{19}$

d. $-\frac{19}{19}$

e. $-\frac{19}{1}$

ANSWER: e

14. What is the numerator of the following fraction?

$\frac{5}{11}$

a. 5

b. $\frac{11}{5}$

c. 11

d. $\frac{5}{11}$

e. 0.455

ANSWER: a

15. Write the number as a decimal.

Forty-eight thousandths

a. 0.0048

b. 0.048

c. 48.000

d. 0.48

e. 4.8

ANSWER: b

16. The following fractions are equivalent.

$\frac{5}{-7}$ and $\frac{-5}{7}$

a. True

b. False

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ANSWER: True

17. Find the quotient.

$\frac{1}{5} \div \frac{11}{3}$

a. $\frac{2}{29}$

b. $\frac{3}{55}$

c. $\frac{1}{12}$

d. $\frac{3}{29}$

e. $\frac{1}{7}$

ANSWER: b

18. Find the quotient.

$\frac{1}{5} \div \frac{13}{7}$

a. $\frac{2}{17}$

b. $\frac{7}{65}$

c. $\frac{9}{70}$

d. $\frac{5}{34}$

e. $\frac{2}{11}$

ANSWER: b

19. Perform the indicated operations involving rational numbers. Express the final answer in reduced form.

$\frac{2}{9} \cdot \frac{6}{19} \div \frac{2}{27}$

a. 1

b. $\frac{1}{19}$

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c. $\frac{17}{18}$

d. $\frac{1}{18}$

e. $\frac{18}{19}$

ANSWER: e

20. Write the equivalent of the fraction using a denominator of 70.

$\frac{4}{7}$

a. $\frac{1}{70}$

b. $\frac{70}{40}$

c. $\frac{40}{70}$

d. $\frac{70}{7}$

e. $\frac{4}{70}$

ANSWER: c

21. Write the number as a fraction.

-20

a. $\frac{20}{1}$

b. $-\frac{1}{20}$

c. $\frac{1}{20}$

d. $-\frac{20}{20}$

e. $-\frac{20}{1}$

ANSWER: e

22. Write the equivalent of the fraction using a denominator of 77.

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$\frac{4}{11}$

a. $\frac{1}{77}$

b. $\frac{77}{28}$

c. $\frac{28}{77}$

d. $\frac{77}{11}$

e. $\frac{4}{77}$

ANSWER: c

23. The following fractions are equivalent.

$\frac{5}{-13}$ and $\frac{-5}{13}$

a. True

b. False

ANSWER: True

24. Write the equivalent of this fraction using a denominator of 66.

$\frac{4}{11}$

a. $\frac{66}{24}$

b. $\frac{66}{11}$

c. $\frac{24}{66}$

d. $\frac{4}{66}$

e. $\frac{1}{66}$

ANSWER: c

25. Write the equivalent of the fraction using a denominator of 22.

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$\frac{4}{11}$

a. $\frac{22}{11}$

b. $\frac{1}{22}$

c. $\frac{22}{8}$

d. $\frac{8}{22}$

e. $\frac{4}{22}$

ANSWER: d

26. Write the number as a fraction with the indicated denominator.

11 as ninths

a. $\frac{1}{9}$

b. $\frac{99}{9}$

c. $\frac{11}{9}$

d. $\frac{9}{99}$

e. $\frac{9}{11}$

ANSWER: b

27. Write the equivalent of the fraction using a denominator of 26.

$\frac{4}{13}$

a. $\frac{26}{13}$

b. $\frac{1}{26}$

c. $\frac{26}{8}$

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Section 1.2: Fractions

d. $\frac{8}{26}$

e. $\frac{4}{26}$

ANSWER: d

28. Write the number as a fraction with the indicated denominator.

2 as ninths

a. $\frac{1}{9}$

b. $\frac{18}{9}$

c. $\frac{2}{9}$

d. $\frac{9}{18}$

e. $\frac{9}{2}$

ANSWER: b

29. Perform the indicated operations involving rational numbers. Express the final answer in reduced form.

$\frac{2}{9} \cdot \frac{6}{13} \div \frac{1}{9}$

a. $\frac{1}{13}$

b. 1

c. $\frac{1}{14}$

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

e. $\frac{13}{14}$

ANSWER: d

30. Perform the addition. Simplify the result when possible.

$\frac{2}{3} + \frac{2}{3}$

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

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Section 1.2: Fractions

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

c. $\frac{4}{7}$

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

e. $\frac{4}{9}$

ANSWER: b

31. Subtract as indicated, and express your answer in lowest terms.

$\frac{5}{8} - \frac{4}{5}$

a. $-\frac{7}{41}$

b. $-\frac{7}{40}$

c. $\frac{1}{5}$

d. $\frac{7}{40}$

e. $-\frac{8}{41}$

ANSWER: b

32. Subtract the fractions below, and express the answer in its lowest terms.

$\frac{3}{17} - \frac{1}{17}$

a. $\frac{4}{17}$

b. $\frac{2}{34}$

c. $\frac{4}{34}$

d. $\frac{2}{17}$

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e. $-\frac{2}{17}$

ANSWER: d

33. Do the addition. Simplify the result when possible.

$\frac{1}{8}+\frac{1}{32}$

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

b. $\frac{2}{32}$

c. $\frac{5}{32}$

d. $\frac{5}{8}$

e. $\frac{7}{32}$

ANSWER: c

34. Find the sum.

$\frac{14}{13}+7$

a. $8\frac{1}{13}$

b. $7\frac{1}{13}$

c. $7\frac{2}{13}$

d. $8\frac{2}{13}$

e. $91\frac{1}{13}$

ANSWER: a

35. Perform the addition. Simplify the result when possible.

$\frac{4}{7}+\frac{4}{7}$

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Section 1.2: Fractions

a. $\frac{8}{9}$

b. $\frac{8}{7}$

c. $\frac{8}{5}$

d. $\frac{7}{8}$

e. $\frac{8}{49}$

ANSWER: b

36. Perform the addition. Simplify the result when possible.

$2\frac{1}{12}+\frac{5}{12}$

a. $2\frac{1}{5}$

b. $2\frac{5}{3}$

c. $2\frac{1}{2}$

d. $2\frac{1}{10}$

e. $2\frac{1}{6}$

ANSWER: c

37. The number above the bar in a fraction is called the _____.

a. denominator
b. reciprocal
c. divisor
d. integer
e. numerator

ANSWER: e

38. Perform the multiplication. Simplify the result when possible.

$\frac{7}{36}\cdot\frac{45}{7}$

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a. $\frac{7}{6}$

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

c. $\frac{7}{8}$

d. $\frac{8}{7}$

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

ANSWER: b

39. Find the difference.

$64\frac{3}{5} - 52\frac{1}{11}$

a. $12\frac{28}{55}$

b. $13\frac{28}{11}$

c. $12\frac{38}{55}$

d. $13\frac{28}{55}$

e. $12\frac{8}{55}$

ANSWER: a

40. Find the difference.

$15\frac{3}{11} - 13\frac{2}{33}$

a. $2\frac{5}{11}$

b. $1\frac{1}{3}$

c. $2\frac{7}{33}$

d. $28\frac{7}{33}$

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e. $2\frac{1}{3}$

ANSWER: c

41. Find the difference.

$196\frac{2}{7} - 117\frac{1}{21}$

a. $196\frac{13}{21}$

b. $313\frac{1}{3}$

c. $313\frac{5}{21}$

d. $79\frac{5}{21}$

e. $79\frac{1}{3}$

ANSWER: d

42. Subtract the following mixed numbers.

$$\begin{array}{r} 9\frac{7}{8} \\ -\ 8\frac{2}{3} \\ \hline \end{array}$$

a. $1\frac{5}{24}$

b. $\frac{5}{24}$

c. $1\frac{5}{24}$

d. 2

e. $1\frac{7}{12}$

ANSWER: a

43. Subtract the following mixed numbers.

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Section 1.2: Fractions

$$\begin{array}{r} 9\frac{5}{10} \\ -\ 7\frac{1}{3} \\ \hline \end{array}$$

a. $2\frac{1}{6}$

b. $\frac{1}{6}$

c. $2\frac{2}{15}$

d. $-2\frac{1}{6}$

e. 3

ANSWER: a

44. The following problem involves the concept of borrowing. (Subtract.)

$10-1\frac{6}{17}$

a. $8\frac{11}{17}$

b. $-\frac{11}{17}$

c. $9\frac{11}{17}$

d. $8\frac{10}{17}$

ANSWER: a

45. Find the difference.

$18\frac{3}{6}-13\frac{1}{42}$

a. $5\frac{2}{3}$

b. $6\frac{11}{21}$

c. $5\frac{10}{21}$

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d. $31\frac{10}{21}$

e. $5\frac{11}{21}$

ANSWER: c

46. Find the difference.

$233\frac{2}{11} - 102\frac{1}{121}$

a. $233\frac{45}{121}$

b. $131\frac{23}{121}$

c. $335\frac{21}{121}$

d. $335\frac{23}{121}$

e. $131\frac{21}{121}$

ANSWER: e

47. Find the difference.

$76\frac{2}{7} - 36\frac{1}{11}$

a. $40\frac{29}{77}$

b. $41\frac{2}{11}$

c. $40\frac{9}{77}$

d. $40\frac{15}{77}$

e. $41\frac{15}{77}$

ANSWER: d

48. Find the sum.

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$5\frac{2}{5}+7\frac{1}{7}$

a. $2\frac{1}{7}$

b. $35\frac{9}{35}$

c. $12\frac{1}{7}$

d. $2\frac{19}{35}$

e. $12\frac{19}{35}$

ANSWER: e

49. Find the sum.

$12\frac{3}{13}+17\frac{1}{13}$

a. $29\frac{4}{39}$

b. $29\frac{5}{13}$

c. $29\frac{4}{13}$

d. $12\frac{4}{13}$

e. $29\frac{3}{13}$

ANSWER: c

50. Find the sum.

$3\frac{1}{11}+7\frac{2}{5}$

a. $10\frac{27}{55}$

b. $4\frac{27}{55}$

c. $4\frac{2}{5}$

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Section 1.2: Fractions

d. $21\frac{-17}{55}$

e. $10\frac{2}{5}$

ANSWER: a

51. Find the sum.

$35\frac{3}{5}+76\frac{2}{7}$

a. $112\frac{3}{35}$

b. $111\frac{2}{35}$

c. $111\frac{31}{35}$

d. $111\frac{3}{35}$

e. $112\frac{31}{35}$

ANSWER: c

52. Find the sum and simplify if necessary.

$6\frac{3}{5}+1\frac{1}{10}+3\frac{1}{15}$

a. $11\frac{23}{25}$

b. $11\frac{4}{5}$

c. $9\frac{23}{30}$

d. $12\frac{4}{5}$

e. $10\frac{23}{30}$

ANSWER: e

53. Write the improper fraction as a mixed number.

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Section 1.2: Fractions

$\frac{44}{5}$

a. $8\frac{5}{8}$

b. $4\frac{5}{8}$

c. $8\frac{4}{5}$

d. $8\frac{1}{5}$

e. $8\frac{3}{5}$

ANSWER: c

54. Write the mixed number as an improper fraction.

$2\frac{2}{3}$

a. 2

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

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

d. $\frac{8}{3}$

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

ANSWER: d

55. Divide.

$3\frac{1}{5} \div 2\frac{1}{2}$

a. $\frac{80}{10}$

b. $\frac{32}{20}$

c. $\frac{30}{25}$

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Section 1.2: Fractions

d. $\frac{30}{20}$

e. $\frac{32}{25}$

ANSWER: e

56. Divide.

$3 \div 7\frac{1}{3}$

a. $\frac{1}{7}$

b. $\frac{9}{22}$

c. $\frac{3}{22}$

d. $\frac{3}{23}$

e. $\frac{3}{7}$

ANSWER: b

57. Multiply.

$2\frac{1}{3} \cdot 3\frac{1}{5}$

a. $3\frac{11}{15}$

b. $6\frac{2}{5}$

c. $7\frac{7}{15}$

d. $1\frac{13}{15}$

e. $\frac{2}{5}$

ANSWER: c

58. Find the difference.

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Section 1.2: Fractions

$311\frac{2}{11} - 137\frac{1}{77}$

a. $311\frac{29}{77}$

b. $448\frac{15}{77}$

c. $448\frac{13}{77}$

d. $174\frac{13}{77}$

e. $174\frac{15}{77}$

ANSWER: d

59. Find the difference.

$63\frac{3}{5} - 41\frac{2}{7}$

a. $22\frac{11}{35}$

b. $23\frac{11}{7}$

c. $22\frac{31}{35}$

d. $23\frac{11}{35}$

e. $22\frac{8}{35}$

ANSWER: a

60. Find the difference.

$15\frac{3}{7} - 13\frac{2}{49}$

a. $2\frac{5}{7}$

b. $1\frac{23}{49}$

c. $2\frac{19}{49}$

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Section 1.2: Fractions

d. $28\frac{19}{49}$

e. $2\frac{23}{49}$

ANSWER: c

61. Find the difference.

$67\frac{2}{5} - 51\frac{1}{7}$

a. $16\frac{19}{35}$

b. $17\frac{2}{7}$

c. $16\frac{7}{35}$

d. $16\frac{9}{35}$

e. $17\frac{9}{35}$

ANSWER: d

62. Find the difference.

$15\frac{3}{6} - 4\frac{1}{42}$

a. $11\frac{2}{3}$

b. $10\frac{11}{21}$

c. $11\frac{10}{21}$

d. $19\frac{10}{21}$

e. $11\frac{11}{21}$

ANSWER: c

63. Find the difference.

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Section 1.2: Fractions

$369\frac{2}{7} - 138\frac{1}{21}$

a. $369\frac{13}{21}$

b. $231\frac{1}{3}$

c. $507\frac{5}{21}$

d. $507\frac{1}{3}$

e. $231\frac{5}{21}$

ANSWER: e

64. Find the sum and simplify if necessary.

$8\frac{1}{13} + 8\frac{3}{7}$

ANSWER: $16\frac{46}{91}$

65. Find the sum and simplify if necessary.

$37\frac{1}{11} + 72\frac{2}{7}$

ANSWER: $109\frac{29}{77}$

66. Find the sum and simplify if necessary.

$9\frac{2}{5} + 2\frac{1}{10} + 7\frac{3}{15}$

ANSWER: $18\frac{7}{10}$

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Name:_____ Class:_____ Date:_____

Section 1.3: The Real Numbers

1. The set of _____ numbers is { ... –3, –2, –1, 0, 1, 2, 3, ...}.

a. irrational
b. whole
c. integer
d. natural
e. negative

ANSWER: c

2. Round 92,781 to the nearest ten.

a. 92,700
b. 92,790
c. 90,000
d. 92,780
e. 92,800

ANSWER: d

3. Round $217,285 to the nearest $100.

$_____

ANSWER: 217,300

4. A _____ number is any number that can be expressed as a fraction with an integer numerator and a nonzero integer denominator.

a. rational
b. whole
c. negative
d. real
e. positive

ANSWER: a

5. The repeating decimal 0.181818 . . . is equivalent to which fraction?

a. $\frac{4}{11}$ b. $\frac{6}{11}$
c. $\frac{5}{11}$ d. $\frac{2}{11}$

ANSWER: d

6. Write the decimal in fraction form.
0.33

a. $\frac{33}{1,000}$
b. $\frac{100}{33}$

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Section 1.3: The Real Numbers

c. $\frac{33}{10}$
d. $\frac{33}{100}$
e. $\frac{10}{33}$

ANSWER: d

7. How can the decimal –43.91 be written as a mixed number?

a. $43\frac{100}{91}$
b. $-91\frac{43}{100}$
c. $43\frac{91}{100}$
d. $-43\frac{91}{100}$
e. $-43\frac{91}{10}$

ANSWER: d

8. How can the decimal –60.19 be written as a mixed number?

a. $60\frac{100}{19}$
b. $-19\frac{60}{100}$
c. $60\frac{19}{100}$
d. $-60\frac{19}{100}$
e. $-60\frac{19}{10}$

ANSWER: d

9. Write the decimal in fraction form.
0.99

a. $\frac{99}{1,000}$
b. $\frac{100}{99}$
c. $\frac{99}{10}$
d. $\frac{99}{100}$
e. $\frac{10}{99}$

ANSWER: d

10. Rewrite the decimal 26.8 as a mixed number.

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Section 1.3: The Real Numbers

a. $26\frac{8}{10}$
b. $26\frac{8}{100}$
c. $26\frac{10}{8}$
d. $-26\frac{8}{10}$
e. $8\frac{26}{10}$

ANSWER: a

11. How can the decimal –69.46 be written as a mixed number?

a. $-46\frac{69}{100}$
b. $69\frac{46}{100}$
c. $-69\frac{46}{100}$
d. $46\frac{69}{100}$
e. $-69\frac{46}{100}$

ANSWER: c

12. Write the following decimal in fraction form.

0.1

a. $\frac{1}{100}$
b. $-\frac{1}{10}$
c. $\frac{1}{1,000}$
d. $\frac{1}{10}$
e. $-\frac{1}{100}$

ANSWER: d

13. A decimal point is used when working with dollars, but the decimal point is not necessary when working with cents. For each dollar amount, give the equivalent amount expressed as cents.
$4.89, and $0.89

a. 48.9, and 89
b. 4.89, and 89
c. 489, and 89
d. 489, and 890

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Section 1.3: The Real Numbers

e. 489, and 8.9

ANSWER: c

14. Write the fraction in decimal form.

$\frac{25}{128}$

a. 0.2188125
b. 0.2953125
c. 0.1853125
d. 0.1953125
e. 0.1951125

ANSWER: d

15. Write the fraction in decimal form.

$-\frac{9}{200}$

a. –0.00045
b. 0.00045
c. –0.9
d. 0.045
e. –0.045

ANSWER: e

16. Write the fraction in decimal form.

$\frac{2}{5}$

a. 0.04
b. 0.4
c. 10
d. 0.2
e. 0.02

ANSWER: b

17. Write the number as a decimal.

Eighty-eight thousandths

a. 0.0088
b. 0.088
c. 88.000
d. 0.88
e. 8.8

ANSWER: b

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Section 1.3: The Real Numbers

18. Rewrite the decimal 50.3 as a mixed number.

a. $50\frac{3}{10}$
b. $50\frac{3}{100}$
c. $50\frac{10}{3}$
d. $-50\frac{3}{10}$
e. $3\frac{50}{10}$

ANSWER: a

19. How can the decimal –58.24 be written as a mixed number?

a. $-24\frac{58}{100}$
b. $58\frac{24}{100}$
c. $-58\frac{24}{100}$
d. $24\frac{58}{100}$
e. $-58\frac{24}{100}$

ANSWER: c

20. A(n) _____ number is a nonterminating, nonrepeating decimal.

a. irrational
b. even
c. opposite
d. integer
e. odd

ANSWER: a

21. $\sqrt{5}\frac{5}{3}$ is an example of a(n)

a. natural number
b. whole number
c. rational number
d. irrational number

ANSWER: d

22. List the numbers in the set that are natural numbers.

$$\left\{-4, -1, -\frac{3}{4}, 0, 1, \frac{7}{6}, 2, \sqrt{6}, 2.75, 5, 9\right\}$$

a. $1, 2, 5, 9$

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Section 1.3: The Real Numbers

b. $-4, -1, -\frac{3}{4}, 0, 1, \frac{7}{6}, 2, 2.75, 5, 9$

c. $-4, -1, -\frac{3}{4}, 0, 1, 2, 2.75, 5, 9$

d. $-4, -1, -\frac{3}{4}, 0, 1, \frac{7}{6}, 2, \sqrt{6}, 2.75, 5, 9$

e. $-4, -1, 0, 1, 2, 2.75, 5, 9$

ANSWER: a

Match each description below with the letter of the correct number set.

a. {1,..., 4, 5, 6,...}
b. {0,..., 3, 4, 5, ...}
c. {..., –5, –4, –3,..., 0, ..., 3, 4, 5, ...}

23. integer
ANSWER: c

24. whole
ANSWER: b

25. natural
ANSWER: a

26. Write the decimal in words.
6.098

a. Six and ninety-eight divided by a thousand
b. Six and ninety-eight thousandths
c. Six and ninety-eight hundredths
d. Six and ninety-eight ten-thousandths
e. Six ninety eight thousand

ANSWER: b

27. Which symbol indicates "is less than or equal to"?

a. $\geq$
b. $>$
c. $\leq$
d. $<$

ANSWER: c

Match each symbol below with the letter of the corresponding phrase.

a. is not equal to

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Section 1.3: The Real Numbers

b. is greater than
c. is less than
d. is less than or equal to
e. is greater than or equal to

28. $\geq$
ANSWER: e

29. $<$
ANSWER: c

30. $\leq$
ANSWER: d

31. $>$
ANSWER: b

32. $\neq$
ANSWER: a

33. Insert one of the symbols $>$, $<$, or $=$ in the blank.
$\sqrt{11}$ _____ π

a. $<$
b. $=$
c. $>$

ANSWER: c

34. $-\frac{\pi}{6}$ is located between which of the following two numbers on the number line?

a. 0 and 1
b. -1 and 0
c. -2 and -1
d. -3 and -2

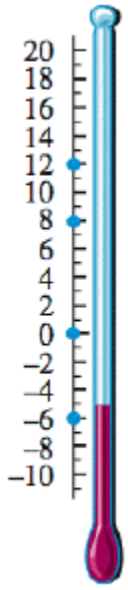
ANSWER: b

35. Which of the following temperatures is not graphed with a light blue dot on the thermometer shown below?

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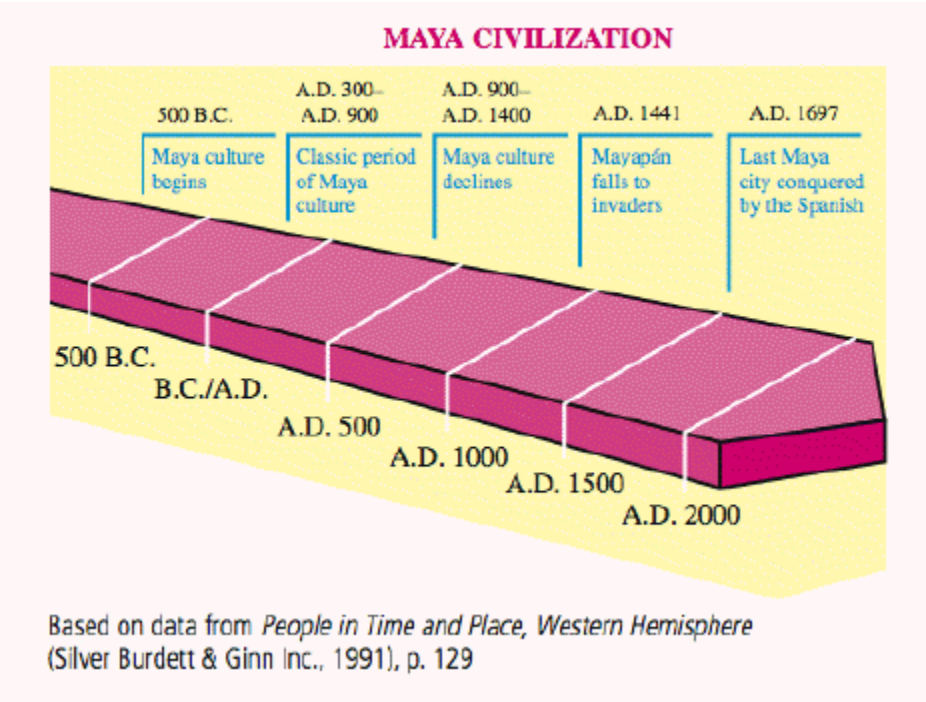
Section 1.3: The Real Numbers



a. -8
b. 0
c. 8
d. -6
e. 12

ANSWER: a

36. On the number line in the illustration, the origin is the point B.C./A.D.



Based on data from *People in Time and Place, Western Hemisphere* (Silver Burdett & Ginn Inc., 1991), p. 129

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Name:_____ Class:_____ Date:_____

Section 1.3: The Real Numbers

What happened in the year A.D. 1200?

a. Maya culture declines
b. The Spanish conquer the final Maya city
c. The beginning of Maya culture
d. Invaders overtake Mayapan
e. Maya culture is in its classic period

ANSWER: a

37. An electronics company has strict specifications for silicon chips used in computers. The company will only install chips that are within 0.02 centimeters of the specified thickness. If the thickness specification of the chip type is 0.515 cm, find the lower and upper limit for the acceptable range of thickness of the chips.

a. The lower limit is 0.495 cm and the upper is 0.535 cm.
b. The lower limit is 0.505 cm and the upper is 0.534 cm.
c. The lower limit is 0.596 cm and the upper is 0.534 cm.
d. The lower limit is 0.495 cm and the upper is 0.545 cm.
e. The lower limit is 0.496 cm and the upper is 0.535 cm.

ANSWER: a

38. Construct a decimal number by writing:

9 in the tenths column,
4 in the thousandths column,
8 in the tens column,
7 in the thousands column,
2 in the hundreds column,
7 in the hundredths column,
3 in the ten thousandths column,
5 in the ones column.

ANSWER: 7285.9743

39. Round the number in the left column to the place indicated in each of the other columns.

Number	Hundred	Ten	Unit	Tenth	Hundredth	Thousandth
616.9884						

a.
```
Number    Hundred  Ten   Unit Tenth  Hundredth Thousandth
616.9884 600      620   617 617.0 617.00    616.988
```

b.
```
Number    Hundred  Ten   Unit Tenth  Hundredth Thousandth
616.9884 600      620   618 617.0 617.08    617.079
```

c.
```
Number    Hundred  Ten   Unit Tenth  Hundredth Thousandth
616.9884 600     620   617 617.0 616.99    616.988
```

d.
```
Number    Hundred  Ten   Unit Tenth  Hundredth Thousandth
616.9884 600      610   617 617.0 617.08    616.988
```

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Section 1.3: The Real Numbers

e.
```
Number    Hundred  Ten   Unit Tenth  Hundredth Thousandth
616.9884 500      610   617 617.1 616.99    616.988
```

ANSWER: c

40. Which of the following is NEVER true?

a. $|x| < 0$ b. $|x| > 0$
c. $-|x| < 0$ d. $|-x| > 0$

ANSWER: a

41. Find the absolute value.

$|21 - 15|$

a. 6
b. 8
c. -8
d. 0
e. -6

ANSWER: a

42. Find the value of the expression.

$-|-85|$

a. -85
b. 85
c. 70
d. -70
e. 0

ANSWER: a

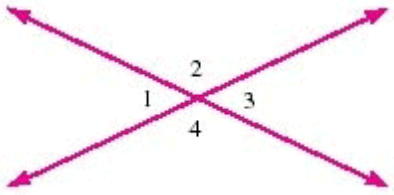
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Name:_____ Class:_____ Date:_____

Section 1.4: Adding Real Numbers; Properties of Addition

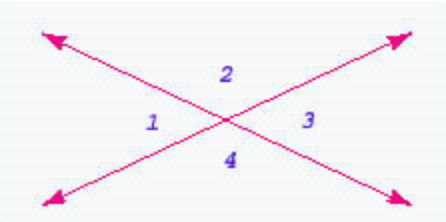
1. Refer to the figure below in which $m(\angle 1) = 14°$. Find $m(\angle 2) + m(\angle 3) + m(\angle 4)$.



_____ degrees

ANSWER: 346

2. In the figure below, $m(\angle 1) = 52°$. Find the sum of $m(\angle 2) + m(\angle 4)$.

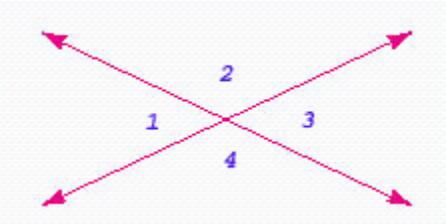


$m(\angle 2) + m(\angle 4) =$ _____ °

ANSWER: 256

3. In the figure below, $m(\angle 1) = 50°$.

Find the sum of $m(\angle 2) + m(\angle 3) + m(\angle 4)$.



a. 230º
b. 310º
c. 100º
d. 130º
e. 40º

ANSWER: b

4. Perform the addition. Simplify the result when possible.

$\frac{4}{7} + \frac{4}{7}$

a. $\frac{8}{9}$

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Section 1.4: Adding Real Numbers; Properties of Addition

b. $\frac{8}{7}$

c. $\frac{8}{11}$

d. $\frac{7}{8}$

e. $\frac{8}{49}$

ANSWER: b

5. Perform the addition. Simplify the result when possible.

$4\frac{1}{8}+\frac{3}{8}$

a. $4\frac{2}{3}$

b. $4\frac{3}{7}$

c. $4\frac{1}{2}$

d. $4\frac{1}{6}$

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

ANSWER: c

6. Perform the operation.

$0.81558+1.3845$

a. 1.20008

b. 2.21008

c. 1.90008

d. 2.20008

e. 2.30008

ANSWER: d

7. Add the following numbers.

$$\begin{array}{r} 38.7 \\ +\ 31.9 \\ \hline \end{array}$$

a. 66.6

b. 70.6

c. 71.6

d. 70.7

e. 70.4

ANSWER: b

8. Find the sum.

$5\frac{1}{11}+7\frac{3}{5}$

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Section 1.4: Adding Real Numbers; Properties of Addition

a. $2\frac{3}{5}$

b. $34\frac{27}{55}$

c. $12\frac{3}{5}$

d. $2\frac{38}{55}$

e. $12\frac{38}{55}$

ANSWER: e

9. Find the sum.
$\frac{14}{13}+8$

a. $9\frac{1}{13}$

b. $8\frac{1}{13}$

c. $8\frac{2}{13}$

d. $9\frac{2}{13}$

e. $104\frac{1}{13}$

ANSWER: a

10. Do the addition. Simplify the result when possible.
$\frac{1}{5}+\frac{1}{15}$

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

b. $\frac{2}{15}$

c. $\frac{4}{15}$

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

e. $\frac{-5}{15}$

ANSWER: c

11. Find the sum.
$9\frac{3}{13}+9\frac{1}{13}$

a. $18\frac{4}{39}$

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Section 1.4: Adding Real Numbers; Properties of Addition

b. $18\frac{5}{13}$

c. $18\frac{4}{13}$

d. $9\frac{4}{13}$

e. $18\frac{3}{13}$

ANSWER: c

12. Add.

$$\begin{array}{r} 97 \\ +28 \\ \hline \end{array}$$

a. 125

b. 115

c. 135

d. 127

e. 126

ANSWER: a

13. Add.
$(96 + 14) + 39$

a. 148

b. 139

c. 150

d. 159

e. 149

ANSWER: e

14. Add.
$(4{,}234 + 211) + 5{,}238$

a. 5,450

b. 4,446

c. 5,449

d. 9,683

e. 9,684

ANSWER: d

15. Find the sum.
$51\frac{1}{5} + 72\frac{3}{7}$

a. $123\frac{1}{5}$

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Section 1.4: Adding Real Numbers; Properties of Addition

b. $123\frac{22}{35}$

c. $124\frac{22}{35}$

d. $123\frac{4}{35}$

e. $123\frac{22}{5}$

ANSWER: b

16. Find the sum.
$-9\frac{3}{5}+\left(-3\frac{1}{25}\right)$

a. $6\frac{17}{26}$

b. $-6\frac{16}{25}$

c. $-12\frac{16}{25}$

d. $-12\frac{14}{25}$

e. $12\frac{16}{25}$

ANSWER: c

17. Find the sum.
$7\frac{2}{11}+9\frac{3}{5}$

a. $16\frac{43}{55}$

b. $2\frac{43}{55}$

c. $2\frac{3}{5}$

d. $63\frac{-23}{55}$

e. $16\frac{3}{5}$

ANSWER: a

18. Find the sum and simplify if necessary.
$8\frac{1}{5}+8\frac{3}{10}+6\frac{2}{15}$

a. $23\frac{19}{25}$

b. $23\frac{11}{15}$

c. $21\frac{19}{30}$

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Section 1.4: Adding Real Numbers; Properties of Addition

d. $24\frac{11}{15}$

e. $22\frac{19}{30}$

ANSWER: e

19. Find the sum.
$36\frac{3}{7} + 70\frac{1}{5}$

a. $107\frac{3}{35}$

b. $106\frac{1}{35}$

c. $106\frac{22}{35}$

d. $106\frac{3}{35}$

e. $107\frac{22}{35}$

ANSWER: c

20. Perform the operation.
$0.16689 + 1.8727$

a. 1.04

b. 2.05

c. 1.74

d. 2.04

e. 2.14

ANSWER: d

21. Add.

$$\begin{array}{r} 2{,}369 \\ +\ 4{,}775 \\ +\ 2{,}335 \\ \hline \end{array}$$

a. 8,479

b. 9,379

c. 9,479

d. 9,469

e. 9,489

ANSWER: c

22. Add.

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Section 1.4: Adding Real Numbers; Properties of Addition

$$\begin{array}{r} 1{,}244 \\ +\ \ 577 \\ +\ \ 38 \\ \hline \end{array}$$

a. 1,959
b. 1,829
c. 1,859
d. 1,869
e. 1,759

ANSWER: c

23. Find the sum.

$\frac{10}{7} + 5$

a. $6\frac{3}{7}$
b. $5\frac{3}{7}$
c. $5\frac{4}{7}$
d. $6\frac{4}{7}$
e. $35\frac{3}{7}$

ANSWER: a

24. Find the sum.

$5\frac{2}{11} + 7\frac{3}{7}$

a. $2\frac{3}{7}$
b. $34\frac{58}{77}$
c. $12\frac{3}{7}$
d. $2\frac{47}{77}$
e. $12\frac{47}{77}$

ANSWER: e

25. Do the addition. Simplify the result when possible.

$\frac{1}{7} + \frac{1}{28}$

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Section 1.4: Adding Real Numbers; Properties of Addition

a. $\frac{5}{4}$
b. $\frac{2}{28}$
c. $\frac{5}{28}$
d. $\frac{5}{7}$
e. $\frac{3}{28}$

ANSWER: c

26. Find the sum.
$14\frac{3}{11}+6\frac{2}{11}$

a. $20\frac{5}{66}$
b. $20\frac{6}{11}$
c. $20\frac{5}{11}$
d. $14\frac{5}{11}$
e. $20\frac{3}{11}$

ANSWER: c

27. Perform the addition. Simplify the result when possible.
$3\frac{1}{16}+\frac{3}{16}$

a. $3\frac{2}{3}$
b. $3\frac{3}{7}$
c. $3\frac{1}{4}$
d. $3\frac{1}{12}$
e. $3\frac{1}{5}$

ANSWER: c

28. Perform the addition. Simplify the result when possible.
$\frac{2}{3}+\frac{2}{3}$

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

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Section 1.4: Adding Real Numbers; Properties of Addition

c. $\frac{4}{11}$

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

e. $\frac{4}{9}$

ANSWER: b

29. Find the sum and simplify if necessary.

$15\frac{2}{8}+9\frac{3}{11}$

ANSWER: $24\frac{23}{44}$

30. Find the sum and simplify if necessary.

$35\frac{1}{5}+75\frac{3}{7}$

ANSWER: $110\frac{22}{35}$

31. Find the sum and simplify if necessary.

$6\frac{1}{5}+3\frac{4}{10}+8\frac{2}{15}$

ANSWER: $17\frac{11}{15}$

32. Find the sum.

$(-0.4)+0.8$

a. 0.4

b. 0.8

c. 0.5

d. 0.6

e. 1

ANSWER: a

33. Find the sum.

$(-0.3)+0.9$

a. 0.6

b. 1.1

c. 0.7

d. 0.8

e. 1.2

ANSWER: a

34. Match the statement below with the corresponding property of real numbers.

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Section 1.4: Adding Real Numbers; Properties of Addition

$8 + (-8)$

a. Associative property of addition
b. Commutative property of addition
c. Commutative property of multiplication
d. Additive inverse property

ANSWER: d

35. Which property of addition guarantees that the quantities below are equal?
$7 + 6 = 6 + 7$

a. commutative
b. distributive
c. identity
d. additive
e. associative

ANSWER: a

36. In evaluating $(1 + 2) + 7$, what addition should be performed first?

a. $2 + 7$
b. $1 + 7$
c. $1 + 2$

ANSWER: c

37. What property of addition is shown?

$(5 + 6) + 9 = 5 + (6 + 9)$

a. identity
b. distributive
c. associative
d. commutative
e. additive

ANSWER: c

38. Add.
$(4{,}236 + 216) + 5{,}234$

a. 5,449
b. 4,451
c. 5,450
d. 9,686
e. 9,685

ANSWER: d

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Section 1.4: Adding Real Numbers; Properties of Addition

39. Add.
$(93+15)+39$

a. 148
b. 137
c. 146
d. 157
e. 147

ANSWER: e

40. Add.
$837+(96+27)$

a. 948
b. 960
c. 930
d. 950
e. 969

ANSWER: b

41. Add.
$-8+10+(-10)+8+1$

a. 4
b. 1
c. –1
d. –4
e. 0

ANSWER: b

42. Determine the correct statement.

a. $(a+b)+c=a+(b-c)$
b. $(a+b)+c=a+b$
c. $(a+b)+c=a-a$
d. $(a+b)+c=a+(b+c)$
e. $(a+b)+c=a+c$

ANSWER: d

43. The simplified form of the expression $|13|$ is -13.

a. True
b. False

ANSWER: False

44. A solution of the equation is 6.

$0=a+6$

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Section 1.4: Adding Real Numbers; Properties of Addition

a. True
b. False

ANSWER: False

45. The opposite of –29 is 29.
a. True
b. False

ANSWER: True

46. Add: – 18 + 18

a. 0 b. 36
c. – 36 d. 20

ANSWER: a

47. Determine the correct statement.

a. If $a + (-a) = 0$, then a and $-a$ are called undefined numbers.
b. If $a + (-a) = 0$, then a and $-a$ are called positive numbers.
c. If $a + (-a) = 0$, then a and $-a$ are called multiplicative inverses.
d. If $a + (-a) = 0$, then a and $-a$ are called additive inverses.
e. If $a + (-a) = 0$, then a and $-a$ are called commutative numbers.

ANSWER: d

48. The opposite of –50 is 50.
a. True
b. False

ANSWER: True

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Section 1.5: Subtracting Real Numbers

1. $34 - 10 = 24$
   a. True
   b. False

ANSWER: True

2. Subtract.

$$\begin{array}{r} 1{,}515 \\ -\ \ 549 \\ \hline \end{array}$$

   a. 866
   b. 966
   c. 937
   d. 967
   e. 1,066

ANSWER: b

3. Subtract:

$566 - (537 - 87)$

   a. –58
   b. 116
   c. 136
   d. 1,016
   e. 126

ANSWER: b

4. Subtract.

$$\begin{array}{r} 42.5 \\ -\ 21.1 \\ \hline \end{array}$$

   a. 21.2
   b. 22.4
   c. 21.4
   d. 21.5
   e. 20.4

ANSWER: c

5. Subtract.

$31 - 20.425$

   a. 11.575
   b. 10.585
   c. 10.575
   d. 10.573
   e. 10.475

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Section 1.5: Subtracting Real Numbers

ANSWER: c

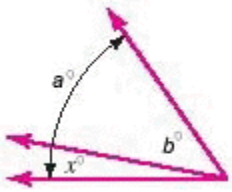
6. Subtract.

$-24.92-(-34.613)$

a. 9.673
b. –9.693
c. 9.793
d. 10.818
e. 9.693

ANSWER: e

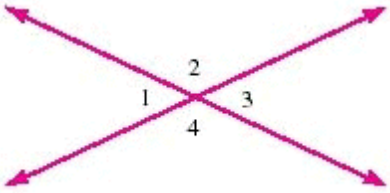
7. In the figure below, angle $a = 82°$ and angle $b = 40°$. Find x.



a. 46°
b. 42°
c. 51°
d. 56°
e. 122°

ANSWER: b

8. Refer to the illustration and find $m(\angle 2)$ if $m(\angle 1) = 30°$.



a. 61°
b. 60°
c. 30°
d. 150°
e. 120°

ANSWER: d

9. Subtract as indicated, and express your answer in lowest terms.

$-\frac{2}{17}-\frac{9}{68}$

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Section 1.5: Subtracting Real Numbers

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

ANSWER: a

10. Perform the operation.

$\frac{1}{2}-\left(-\frac{4}{5}\right)$

a. $\frac{13}{10}$
b. $\frac{2}{5}$
c. $\frac{3}{10}$
d. $\frac{3}{2}$
e. $-\frac{3}{10}$

ANSWER: a

11. Subtract as indicated, and express your answer in lowest terms.

$\frac{5}{8}-\frac{4}{5}$

a. $-\frac{7}{41}$
b. $-\frac{7}{40}$
c. $\frac{1}{5}$
d. $\frac{7}{40}$
e. $-\frac{8}{41}$

ANSWER: b

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Section 1.5: Subtracting Real Numbers

12. Subtract the fractions below, and express the answer in its lowest terms.

$\frac{10}{13} - \frac{3}{13}$

a. $\frac{13}{13}$
b. $\frac{7}{26}$
c. $\frac{13}{26}$
d. $\frac{7}{13}$
e. $-\frac{7}{13}$

ANSWER: d

13. Find the difference.

$19\frac{3}{7} - 5\frac{2}{49}$

a. $14\frac{5}{7}$
b. $13\frac{23}{49}$
c. $14\frac{19}{49}$
d. $24\frac{19}{49}$
e. $14\frac{23}{49}$

ANSWER: c

14. Find the difference.

$56\frac{2}{5} - 51\frac{1}{7}$

a. $5\frac{9}{35}$
b. $6\frac{9}{7}$
c. $5\frac{19}{35}$
d. $6\frac{9}{35}$
e. $5\frac{7}{35}$

ANSWER: a

15. Find the difference.

$354\frac{3}{11} - 146\frac{1}{33}$

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Section 1.5: Subtracting Real Numbers

a. $354\frac{28}{33}$
b. $500\frac{10}{33}$
c. $500\frac{8}{33}$
d. $208\frac{8}{33}$
e. $208\frac{10}{33}$

ANSWER: d

16. Subtract the following mixed numbers.

$$\begin{array}{r} 7\frac{4}{5} \\ -\ 10\frac{3}{7} \\ \hline \end{array}$$

a. $-2\frac{22}{35}$
b. $\frac{13}{35}$
c. $-3\frac{1}{35}$
d. -2
e. $-3\frac{12}{35}$

ANSWER: a

17. Subtract the following mixed numbers.

$$\begin{array}{r} 7\frac{5}{6} \\ -\ 5\frac{2}{5} \\ \hline \end{array}$$

a. $2\frac{13}{30}$
b. $\frac{13}{30}$
c. $2\frac{1}{10}$
d. $2\frac{1}{3}$
e. 3

ANSWER: a

18. Subtract. The following problem involves the concept of borrowing.

$17 - 1\frac{4}{7}$

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Section 1.5: Subtracting Real Numbers

a. $15\frac{3}{7}$

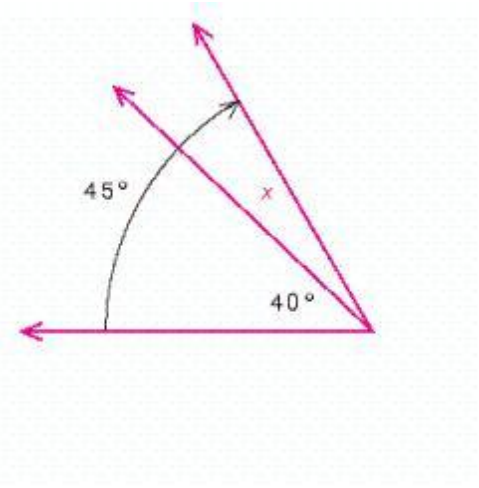
b. $-\frac{3}{7}$

c. $16\frac{3}{7}$

d. $15\frac{2}{7}$

ANSWER: a

19. Find x.



a. 7°

b. 8°

c. 5°

d. 4°

e. 85°

ANSWER: c

20. Subtract.

$$\begin{array}{r} 421 \\ -\ 348 \\ \hline \end{array}$$

a. 73

b. 74

c. 75

d. 63

e. 72

ANSWER: a

21. Subtract.

$$\begin{array}{r} 29{,}303 \\ -\ 10{,}007 \\ \hline \end{array}$$

a. 19,296

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Section 1.5: Subtracting Real Numbers

b. 19,396
c. 19,306
d. 18,286
e. 18,296

ANSWER: a

22. The late Florence Griffith-Joyner set the United States national and world record in the 100-meter sprint: 10.03 seconds. Jenny Thompson set the United States national record in the 100-meter freestyle swim: 53.24 seconds. How much faster did Griffith-Joyner run the 100 meters than Thompson swam it?

a. 42.11 seconds
b. 43.22 seconds
c. 43.16 seconds
d. 43.21 seconds
e. 44.32 seconds

ANSWER: d

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Section 1.6: Multiplying and Dividing Real Numbers; Multiplication and Division Properties

1. Perform the operation.

$$\frac{11}{5}\left(-\frac{30}{11}\right)$$

a. 11
b. -6
c. -11
d. 6
e. -7

ANSWER: b

2. Perform the multiplication. Simplify the result when possible.

$$\frac{5}{49} \cdot \frac{56}{5}$$

a. $\frac{10}{9}$
b. $\frac{8}{7}$
c. $\frac{4}{5}$
d. $\frac{5}{4}$
e. $\frac{9}{8}$

ANSWER: b

3. Perform the operation.

$238.263 - 246.05639$

a. 58626.13365057
b. 58,631.63365057
c. 58,630.33365057
d. 58,629.13365057
e. 58,626.63365057

ANSWER: a

4. Multiply.

$5 \cdot 4$

a. 9
b. 20
c. 54
d. 4
e. 5

ANSWER: b

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Section 1.6: Multiplying and Dividing Real Numbers; Multiplication and Division Properties

5. Multiply.

$$\begin{array}{r} 5{,}273 \\ \times\ 3{,}120 \\ \hline \end{array}$$

a. 16,450,760
b. 16,451,760
c. 16,453,760
d. 18,451,760
e. 17,451,760

ANSWER: b

6. Multiply.

$25 \cdot 45 \cdot 5$

a. 5,400
b. 5,635
c. 5,860
d. 5,410
e. 5,625

ANSWER: e

7. Multiply.

$2\frac{1}{3} \cdot 3\frac{1}{5}$

a. $3\frac{11}{15}$
b. $6\frac{2}{5}$
c. $7\frac{7}{15}$
d. $1\frac{13}{15}$
e. $6\frac{1}{15}$

ANSWER: c

8. Multiply.

$-4\frac{1}{8} \cdot 6\frac{1}{2}$

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Section 1.6: Multiplying and Dividing Real Numbers; Multiplication and Division Properties

a. $24\frac{1}{16}$

b. $-24\frac{1}{16}$

c. $-26\frac{1}{8}$

d. $-26\frac{13}{16}$

e. $26\frac{13}{16}$

ANSWER: d

9. Multiply.

$-12 \cdot 4\frac{1}{3}$

a. $-17\frac{1}{3}$

b. 44

c. $-48\frac{1}{3}$

d. -52

e. 52

ANSWER: d

10. Multiply.

$-2.9 \cdot 1.9$

a. 5.51

b. 55.1

c. –55.1

d. –5.51

e. –11.11

ANSWER: d

11. Multiply.

$$\begin{array}{r} 431 \\ \times \quad 3 \\ \hline \end{array}$$

a. 1,193

b. 1,293

c. 1,294

d. 1,283

e. 1,393

ANSWER: b

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Section 1.6: Multiplying and Dividing Real Numbers; Multiplication and Division Properties

12. Multiply.

$$\begin{array}{r} 379 \\ \times\ 209 \\ \hline \end{array}$$

a. 78,074
b. 78,453
c. 78,832
d. 79,590
e. 79,211

ANSWER: e

13. Multiply and reduce your answer to lowest terms.

$$-\frac{58}{4} \cdot \frac{10}{29} \cdot \frac{1}{20}$$

a. $-\frac{1}{4}$
b. $\frac{1}{4}$
c. -1
d. 1
e. $\frac{1}{8}$

ANSWER: a

14. Multiply.

$-0.6 \cdot 6.7 \cdot (-5.1)$

a. 20.502
b. 0.20502
c. –2.0502
d. –20.502
e. 2.0502

ANSWER: a

15. Complete the statement so that the indicated property is illustrated.
Multiplicative inverse property:

$26 \cdot \frac{1}{26} =$ _____

a. 1
b. 0
c. $\frac{1}{26}$

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d. –1
e. 26

ANSWER: a

16. Multiply.

$-45.07 \cdot 10$

a. –0.4507
b. –4,507
c. –4.507
d. –450.7
e. –450.7

ANSWER: d

17. Which of the following formulas illustrates the associative property of multiplication?

a. $(a \cdot b) \cdot c = a \cdot (b \cdot c)$
b. $a(b + c) = ab + bc$
c. $a + b = b + a$
d. $a \cdot b = b \cdot a$

ANSWER: a

18. State which property of real numbers justifies the statement.

$(3)(5) = (5)(3)$

a. commutative property of multiplication
b. associative property of addition
c. commutative property of addition
d. inverse property of multiplication
e. associative property of multiplication

ANSWER: a

19. Match the statement below with the corresponding property of real numbers.
$1 \cdot 4 = 4$

a. associative property of multiplication
b. inverse property of multiplication
c. identity property of multiplication
d. distributive property

ANSWER: c

20. Multiply without using pencil and paper or a calculator.
$363(100)$

a. 36,300

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Section 1.6: Multiplying and Dividing Real Numbers; Multiplication and Division Properties

b. 363,000
c. 1,363
d. 463
e. 3,630

ANSWER: a

21. Find the quotient.

$$\left(-\frac{3}{11}\right) \div \left(-\frac{19}{44}\right)$$

a. $\frac{12}{209}$
b. $-\frac{12}{19}$
c. $\frac{12}{19}$
d. $-\frac{4}{19}$
e. $\frac{4}{19}$

ANSWER: c

22. Find the quotient.

$$\frac{1}{4} \div \frac{11}{2}$$

a. $\frac{3}{47}$
b. $\frac{1}{22}$
c. $\frac{5}{49}$
d. $\frac{5}{46}$
e. $\frac{7}{45}$

ANSWER: b

23. Find the quotient.

$$\frac{7}{3} \div \left(-\frac{5}{2}\right)$$

a. $-\frac{35}{6}$
b. $\frac{15}{14}$
c. $-\frac{17}{12}$

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Section 1.6: Multiplying and Dividing Real Numbers; Multiplication and Division Properties

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

e. $-\frac{14}{15}$

ANSWER: e

24. Divide.

$(-84.33) \div (-9)$

a. 9.87
b. 9.32
c. 10.37
d. 9.27
e. 9.37

ANSWER: e

25. Divide and round to the nearest tenth.

$-5.133 \div 2.1$

a. –2.3
b. –1.9
c. –2.6
d. –2.5
e. –2.4

ANSWER: e

26. Divide.

$\frac{0.2871}{0.957}$

a. 0.2
b. 0.8
c. 0.3
d. 1.3
e. 0.4

ANSWER: c

27. $80 \div 20 = 4$

a. True
b. False

ANSWER: True

28. Divide:

$35\overline{)11{,}970}$

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Section 1.6: Multiplying and Dividing Real Numbers; Multiplication and Division Properties

a. 341
b. 462
c. 292
d. 342
e. 442

ANSWER: d

29. Divide.

$1\frac{1}{5} \div 4\frac{1}{4}$

a. $\frac{1}{4}$
b. $\frac{3}{10}$
c. $\frac{4}{17}$
d. $\frac{85}{24}$
e. $\frac{24}{85}$

ANSWER: e

30. Divide.

$-3\frac{1}{5} \div 4\frac{1}{4}$

a. $-\frac{64}{85}$
b. $\frac{3}{4}$
c. $-\frac{85}{64}$
d. $-\frac{3}{4}$
e. $\frac{64}{85}$

ANSWER: a

31. Divide.

$7 \div 7\frac{1}{3}$

a. 1
b. $\frac{21}{22}$

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Section 1.6: Multiplying and Dividing Real Numbers; Multiplication and Division Properties

c. $\frac{7}{22}$

d. $\frac{3}{23}$

e. $\frac{22}{21}$

ANSWER: b

32. Divide.
$7\overline{)511}$

a. 518
b. 504
c. 74
d. 83
e. 73

ANSWER: e

33. Divide.
$3{,}720 \div 30$

a. 224
b. 154
c. 3,750
d. 3,690
e. 124

ANSWER: e

34. $12 \div 1 = 12$

a. True
b. False

ANSWER: True

35. Divide.
$\frac{33}{1} =$

a. 0
b. 33
c. 32
d. 1
e. undefined

ANSWER: b

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Section 1.7: Exponents and Order of Operations

1. What number is the base in the expression $(-7)^6$?
ANSWER: –7

2. Simplify the numerical expression.
-10^{-3}

a. $\frac{1}{100}$
b. $-1{,}000$
c. $-\frac{3}{1{,}000}$
d. $\frac{1}{1{,}000}$
e. $-\frac{1}{1{,}000}$

ANSWER: e

3. Simplify the numerical expression.
$10^2 \cdot 10^{-3}$

a. 1,000
b. $\frac{1}{100}$
c. $\frac{1}{1{,}000}$
d. $\frac{1}{10}$
e. 10

ANSWER: d

4. Dividing a decimal by 10^8 is equivalent to multiplying it by which number?

a. 10^{-4}
b. 10^{16}
c. 10^{-8}
d. 10^4
e. 10^8

ANSWER: c

5. Rewrite the following expression using only one exponent:

$7^8(7^4)$
ANSWER: 7^{12}

6. Find the value of the expression $\left(\frac{1}{2}\right)^4$.

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Section 1.7: Exponents and Order of Operations

a. $\frac{1}{16}$
b. $\frac{1}{8}$
c. $\frac{1}{64}$
d. $\frac{1}{32}$
e. $\frac{1}{128}$

ANSWER: a

7. Evaluate the following exponential expression:
7^3

a. 512
b. 2,401
c. 49
d. 64
e. 343

ANSWER: e

8. Simplify the numerical expression.
$-\left(\frac{1}{3}\right)^{-3}$

a. 9
b. $-\frac{1}{27}$
c. -27
d. $-\frac{1}{9}$
e. 64

ANSWER: c

9. Perform the indicated operations using the laws of exponents. Express the result using positive exponents.
$10^{-4} \cdot 10^{-1} \cdot 10^{3}$

a. 10^{12}
b. $\frac{1}{10^2}$
c. $\frac{1}{10^8}$
d. 10^8
e. 10^2

ANSWER: b

10. Use the quotient rule for exponents to simplify the expression. Write the result using exponents.

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Section 1.7: Exponents and Order of Operations

$\frac{8^{12}}{8^3}$

a. 8^{15}
b. $8\frac{1}{2}$
c. 8^9
d. 8
e. 8^3

ANSWER: c

11. Evaluate the power and write your answer as an improper fraction.

$\left(-1\frac{1}{3}\right)^3$

a. $-\frac{64}{27}$
b. $\frac{8}{9}$
c. $\frac{64}{27}$
d. $-\frac{8}{9}$
e. $\frac{9}{27}$

ANSWER: a

12. Write the expression $6t^2$ without using exponents.

a. $6 \cdot t \cdot t$
b. $36 \cdot t \cdot t$
c. $6 \cdot t \cdot t \cdot t$
d. $6 \cdot t$
e. $12 \cdot t$

ANSWER: a

13. Evaluate the expression.

$5 \cdot 10^3 + 5 \cdot 10^2 + 6 \cdot 10^1 + 2$

a. 5,662
b. 5,562
c. 5,567
d. 5,551
e. 5,560

ANSWER: b

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Section 1.7: Exponents and Order of Operations

14. Evaluate.

-5^2+5^2

ANSWER: 0

15. Simplify the numerical expression.

$4(-2)^4 - 5(-4)^2 + 13(-4) + 13$

a. –55
b. 82
c. –39
d. –31
e. 3,657

ANSWER: a

16. Evaluate the expression.

4^2+12^2

ANSWER: 160

17. Simplify the numerical expression.

$(-3)^4+3^3$

a. 109
b. 111
c. 104
d. 100
e. 108

ANSWER: e

18. Simplify the numerical expression.

$(-4)^2-6(-4)(5)-(-4)^2$

a. 128
b. 125
c. 120
d. 114
e. 118

ANSWER: c

19. Simplify the numerical expression.

$5(0.3)^2-2(0.3)+0.5$

a. –2.65
b. –1.65

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Section 1.7: Exponents and Order of Operations

c. 0.35
d. –4.65
e. 1.35

ANSWER: c

20. Evaluate the expression.
$(3.46)^2 - (5.07)^2 - (0.87)^2$

a. –18.1
b. –12.7
c. –15.6
d. –14.5
e. –11.7

ANSWER: d

21. Simplify the numerical expression.
$8(-1)^2 - (-3)^2$

a. –11
b. –7
c. –3
d. –1
e. –6

ANSWER: d

22. Simplify the numerical expression.
$4^3 - 4^3$

a. 5
b. 0
c. 2
d. –1
e. –5

ANSWER: b

23. Evaluate the expression.

$2\frac{2}{5} \cdot \left(-\frac{1}{3}\right)^2 \cdot \left(\frac{4}{5}\right)$

ANSWER: $\frac{16}{75}$

24. Evaluate the expression $3\left(2^3 + 5^3\right)$.

a. 133

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Section 1.7: Exponents and Order of Operations

b. 149
c. 399
d. 397
e. 63

ANSWER: c

25. Simplify the expression.

$(9+51)\div(3\cdot 4)$

a. 5
b. 13.25
c. 77
d. 11
e. 80

ANSWER: a

26. Perform the operations.

$$\frac{2(9)^2-2}{-2^3+3}$$

a. -39
b. 39
c. 32
d. $-\frac{164}{5}$
e. -32

ANSWER: e

27. Evaluate the expression.

$$\frac{\left[4^2-2(-6)\right](-3)^2}{-4(-3)}$$

a. -12
b. -3
c. 3
d. 21
e. -21

ANSWER: d

28. Perform the operation.

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Section 1.7: Exponents and Order of Operations

$$\frac{3(8+4)}{4\cdot 3-15}$$

a. 12
b. -9
c. -12
d. 2
e. -13

ANSWER: c

29. Perform the operation.

$$\frac{100(9-10)}{1000\div 10\div 10}$$

a. -20
b. 1,010
c. -110
d. 10
e. -10

ANSWER: e

30. Evaluate the following expression.

$50-|-43.9+(-31.8)|=$ _____

ANSWER: –25.7

31. Simplify the expression.

$9-|7-2(7-5)|$

a. –3
b. –1
c. 1
d. 6
e. –6

ANSWER: d

32. Evaluate the expression.

$-|7+(-3)|+9$

a. 7
b. 9
c. 5
d. 6
e. 2

ANSWER: c

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Section 1.7: Exponents and Order of Operations

33. Evaluate the expression.
$2.8 + |5.9 + (-3.6)|$

a. 2.4
b. 8.6
c. 5.1
d. 4
e. 0.7

ANSWER: c

34. Simplify the expression.
$(21 + 3) \div (3 \cdot 4)$

a. 2
b. 21.25
c. 25
d. 8
e. 32

ANSWER: a

35. Write the following number in standard decimal form.
$\left(3.05\right)\left(10^3\right)$

a. 30,500
b. 31
c. 305,000
d. 3,050
e. 305

ANSWER: d

36. Simplify the numerical expression.
$\left(2^3 3^{-2}\right)^{-1}$

a. $\frac{9}{8}$
b. $\frac{8}{9}$
c. $\frac{1}{6}$
d. $\frac{1}{3}$
e. $\frac{3}{2}$

ANSWER: a

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Section 1.7: Exponents and Order of Operations

37. Evaluate the expression.

$$\frac{5-(50-10\cdot 5)}{7^2-(8+6^2)}$$

a. 10.5
b. 6
c. 11
d. –5
e. 1

ANSWER: e

38. Evaluate the expression.

$$\frac{12\cdot 7-20(5\cdot 2-9)}{4(3+2)-3^2+5}$$

a. -1
b. 1
c. 9
d. 4
e. 3

ANSWER: d

39. Evaluate the expression $3\left(2^3+3^2\right)$.

a. 61
b. 75
c. 51
d. 48
e. 36

ANSWER: c

40. Simplify the numerical expression $\frac{2^7\cdot 2^9}{2^8\cdot 2^{-1}}$.

a. 128
b. 1,024
c. $\frac{1}{512}$
d. 512
e. 256

ANSWER: d

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Section 1.7: Exponents and Order of Operations

41. Evaluate the expression.

$$\frac{[4^2 - 2(-6)](-3)^2}{-4(-3)}$$

a. –12
b. –3
c. 3
d. 21
e. –21

ANSWER: d

42. Perform the operations.

$(-2)^3[2-(-6)]$

a. 96
b. 32
c. –32
d. –64
e. 64

ANSWER: d

43. Simplify the expression.

$$\left(3^{\frac{1}{2}} 2^{\frac{1}{2}}\right)^2$$

ANSWER: 6

44. Simplify the numerical expression.

$(5-9)^2$

a. 16
b. 15
c. –16
d. 18
e. –12

ANSWER: a

45. Evaluate:

$$\frac{(6+2)^2 + |-11|}{-3(4-9)}$$

a. 6 b. 5
c. $\frac{5}{6}$ d. $\frac{4}{3}$

ANSWER: b

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Section 1.7: Exponents and Order of Operations

46. Evaluate.
$9\left(7\right)-6|-6|^2$

a. –148
b. –150
c. –153
d. –159
e. –157
f. –164
g. –145

ANSWER: c

47. Evaluate the expression.
$\left(2-\frac{1}{4}\right)^2+\left(2+\frac{1}{4}\right)^2$

a. $8\frac{1}{8}$
b. $\frac{1}{16}$
c. $9\frac{1}{8}$
d. $7\frac{1}{8}$
e. $2\frac{1}{16}$

ANSWER: a

48. Find the mean of the list of data.
11, 13, 15, 15, 13, 11

a. 14
b. 12
c. 15
d. 16
e. 13

ANSWER: e

49. Find the mean of the list of data.
40, 66, 43, 36, 81, 59, 98, 105

a. 65
b. 64
c. 67
d. 66

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Section 1.7: Exponents and Order of Operations

e. 68

ANSWER: d

50. Frank's algebra grade is based on the average of four exams, which will count equally. His grades are 85, 80, 80 and 75. Find his average.

a. 75
b. 80
c. 85
d. 95
e. 90

ANSWER: b

51. Several computer stores reported differing prices for toner cartridges for a laser printer (in dollars): 50, 59, 78, 79, 74, 76, 58, 54, 79. Find the mean price of a toner cartridge.

a. $68.44
b. $67.44
c. $67.64
d. $67.24
e. $67.34

ANSWER: b

52. A student received scores of 32, 53, and 76 on three quizzes. His sister received scores of 53, 57, and 58. Find the better average to the nearest integer.

a. 52
b. 55
c. 56
d. 54
e. 53

ANSWER: c

53. The mean of several values is given by the _____ of the values divided by the number of values.

a. product
b. sum
c. quotient
d. average
e. difference

ANSWER: b

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Section 1.8: Algebraic Expressions

1. Consider the algebraic expression below. What are the factors of the third term?
$3xyz + 5xy + 17xz$

a. 5, x, y
b. 5, x, z
c. 17
d. 3, x, z
e. 17, x, z

ANSWER: e

2. Consider the algebraic expression below. Find the product of the numerical coefficients of each term.
$3xy + y + 21xyt$

a. 70
b. 64
c. 62
d. 65
e. 63

ANSWER: e

3. Identify the terms of the expression.

$3b^2 - 6b + 8 - b + 10$
ANSWER: $3b^2$, $-6b$, 8, $-b$, 10

4. What is the variable part of the term $-3nx$?

a. n
b. -3
c. nx
d. $-3nx$
e. x

ANSWER: c

5. What is the variable part of the term $3bx$?

a. b
b. 3
c. bx
d. $3bx$
e. x

ANSWER: c

6. Identify the terms of the expression.

$7a^2 - 5a + 3 - a + 5$

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Section 1.8: Algebraic Expressions

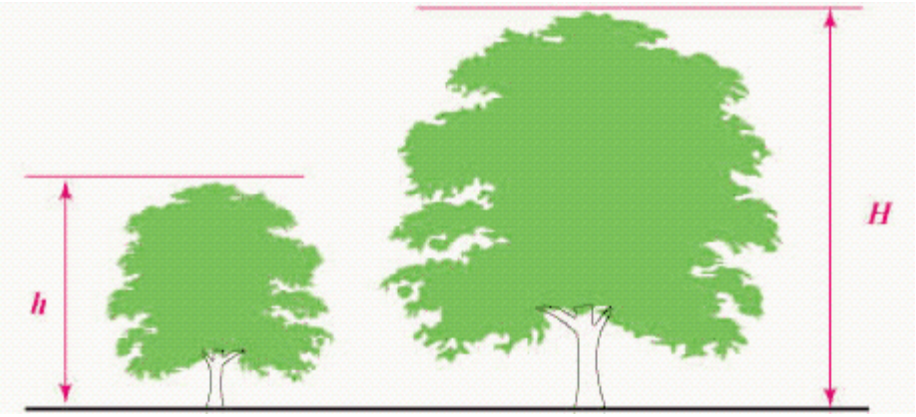
ANSWER: $7a^2, -5a, 3, -a, 5$

7. Let x, y, and z represent three real numbers. Write an algebraic expression to denote the product of z, x, and y.

a. $xy - z$
b. $z - y$
c. xyz
d. $z - xy$
e. $x + 2z$

ANSWER: c

8. The heights of two trees are shown in the illustration below. Find the sum of their heights, if $h = b$, and $H = b + 14$.



a. b
b. 14
c. $2b + 14$
d. $b + 14$
e. $2b + 28$

ANSWER: c

9. Express the statement using one of the words *sum*, *difference*, *product*, or *quotient*.
$2x = 9$

a. The difference of 2 and x is 9.
b. The quotient of 2 and x is 9.
c. The product of 2 and x is 9.
d. The difference of 9 and x is 2.
e. The sum of 2 and x is 9.

ANSWER: c

10. If a highway information sign says it is ***x*** miles to city **A** and ***y*** miles to city **B**, which of the following expressions does NOT represent the distance from city **A** to city **B** .

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Section 1.8: Algebraic Expressions

I. $|x-y|$
II. $|y-x|$
III. $x-y$
IV. $y-x$

a. I and III b. III and IV
c. I and II d. II and IV

ANSWER: b

11. Let $y=3$ and $z=1$. Write the phrase as an algebraic expression, and evaluate it.

z less than y

a. $y-z;1$
b. $y-z;2$
c. $y+z;1$
d. $y+z;2$
e. $y-z;-2$

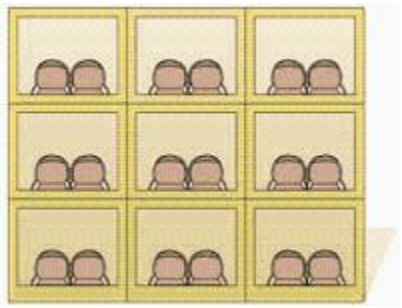
ANSWER: b

12. A girl had d dollars, and her brother had $9 more than three times that amount. How much did the brother have?

a. $2d+9$
b. $3d-8$
c. $3d-9$
d. $3d+8$
e. $3d+9$

ANSWER: e

13. The following illustration shows a rack that contains dress shoes and athletic shoes. If there are m pairs of dress shoes in the rack, how many pairs of athletic shoes are there in the rack?



ANSWER: $9-m$

14. Assume that $x=4$ and $y=8$. Find the values of the two expressions.
$5x+2y$ and $2y+5x$

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Section 1.8: Algebraic Expressions

a. 48 and 48
b. 36 and 36
c. 45 and 51
d. 48 and 36
e. 36 and 48

ANSWER: b

15. Assume that $x = 16$ and $y = -5$. Show that the expression $y - x$ represents a real number by finding the real-number answer.

a. –11
b. –80
c. 11
d. 21
e. –21

ANSWER: e

16. Assume that $x = 19$ and $y = -2$. Show that the expression $x \cdot y$ represents a real number by finding the real-number answer.

a. 17
b. –21
c. –38
d. 38
e. 21

ANSWER: c

17. Evaluate the expression, given that $x = 2$, $y = -1$, and $z = -6$.
$(x + y)^2 - |z + y|$

a. -10
b. -6
c. -5
d. -9
e. -4

ANSWER: b

18. Assume that $x = 5$, $y = 4$, and $z = 1$. Find the values of the expressions.
$x^2(yz^2)$ and $(x^2y)z^2$

a. –100 and –80
b. 100 and 100
c. 80 and –100

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Section 1.8: Algebraic Expressions

d. 100 and –100
e. 80 and 80

ANSWER: b

19. Evaluate the polynomial for $b = 8$.

$7b^3 + 2b - 14$

a. 3,585
b. 3,619
c. 3,614
d. 3,586
e. 3,554

ANSWER: d

20. Evaluate the polynomial for $b = -3$.

$6b + 5$

a. –13
b. –23
c. –18
d. 13
e. 23

ANSWER: a

21. Evaluate the algebraic expression for the given value of the variable.

$8(x - 5) - (x - 3) - 2(2x - 2), x = 4$

ANSWER: –21

22. Evaluate the algebraic expression for the given values of the variables.

$8(x - 1) - 9(x + 3), x = -4$

a. –15
b. 23
c. –35
d. –31
e. 4

ANSWER: d

23. Evaluate the algebraic expression for the given value of the variable.

$13\left(n^2 + 1\right) - 3\left(2n^2 - 3\right) + 3\left(2n^2 - 8\right), n = \frac{1}{2}$

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Section 1.8: Algebraic Expressions

a. $\frac{5}{4}$
b. $\frac{3}{4}$
c. $\frac{5}{2}$
d. $\frac{1}{4}$
e. $\frac{3}{2}$

ANSWER: a

24. Evaluate $4x^2 + 2x$ for $x = -1$.

a. 2 b. –6
c. –2 d. –18

ANSWER: a

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Section 1.9: Simplifying Algebraic Expressions Using Properties of Real Numbers

1. Rewrite the following expression using the commutative and associative properties of multiplication.
$8(-4a)(6)$

Select the correct answer.

a. $8a(6-4)$
b. $[(8-4)(6)]a$
c. $(8-4+6)a$
d. $[8(-4)(6)]a$
e. $[(8)(6)]-4a$

ANSWER: d

2. Simplify the expression $\left(\frac{7}{15}b\right)\left(\frac{15}{28}\right)$.

Select the correct answer.

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

ANSWER: b

3. In the expression $(t+7)(-8)$, which factor is distributed?

a. 8
b. $t + 7$
c. –7
d. 7
e. –8

ANSWER: e

4. In the expression $(m+4)(-2)$, which factor is distributed?

a. 2
b. $m + 4$
c. –4
d. 4
e. –2

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Section 1.9: Simplifying Algebraic Expressions Using Properties of Real Numbers

ANSWER: e

5. Determine the correct statement.

a. $a \cdot (b+c) = a \cdot b + c$
b. $a \cdot (b+c) = a \cdot b + a \cdot c$
c. $a \cdot (b+c) = a \cdot b + a$
d. $a \cdot (b+c) = a \cdot b + c \cdot b$
e. $a \cdot (b+c) = a \cdot b + \frac{1}{b}$

ANSWER: b

6. Use the distributive property to write the expression $x(x+8)$ without parentheses. Simplify the result, if possible.

a. $x^2 + 8x$
b. $x + 8x$
c. $x + x + 8x$
d. $2x + 8$
e. $x^2 + 8x^2 + 8x$

ANSWER: a

7. Use the distributive property to write the expression $3x(b-x)$ without parentheses. Simplify the result, if possible.

a. $3bx - 3b^2$
b. $bx + b - 3x^2$
c. $3x + b - x$
d. $3bx - 3x^2$
e. $bx - 3x^2$

ANSWER: d

8. What exponent must appear in the box to make the terms like terms?
$-2b^4$, $3b^{\square}$

a. 25
b. 3
c. –4
d. 4
e. –1

ANSWER: d

9. Simplify the following expression by combining like terms.

$10(9a+10) - 3(8a+4)$

ANSWER: $66a + 88$

10. Identify the like terms from the list below and add them.

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Section 1.9: Simplifying Algebraic Expressions Using Properties of Real Numbers

$-8x,\ 3,\ 11b,\ -12x$
ANSWER: $-20x$

11. Simplify the algebraic expression by combining similar terms.

$16x - 2 + 5x - 8$

a. $21x + 10$
b. $21x - 10$
c. $10x - 21$
d. $21x - 6$
e. $10x + 21$

ANSWER: b

12. Simplify the algebraic expression by removing parentheses and combining similar terms.
$4(x+3) + 7(x+4)$

a. $11x - 40$
b. $11x + 40$
c. $40x - 11$
d. $40x + 11$
e. $11x - 10$

ANSWER: b

13. Simplify the algebraic expression by removing parentheses and combining similar terms.
$3(2x + 9) + 3(3x - 7)$

a. $15x - 6$
b. $-15x + 16$
c. $15x + 6$
d. $-15x - 16$

ANSWER: c

14. Simplify the algebraic expression by removing parentheses and combining similar terms.

$2(n^2 - 3) - 7(4n^2 + 1)$

a. $-26n^2 + 7$
b. $26n^2 + 13$
c. $26n^2 - 7$
d. $-26n^2 + 12$
e. $-26n^2 - 13$

ANSWER: e

15. Simplify the algebraic expression by removing parentheses and combining similar terms.

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Section 1.9: Simplifying Algebraic Expressions Using Properties of Real Numbers

$2(-x - 5) - 6(3x + 1) - 5(x + 2)$

a. $-25x - 26$
b. $-23x - 26$
c. $-23x - 22$
d. $23x + 26$
e. $-25x - 22$

ANSWER: a

16. Simplify the expression.

$$\left(-3z^2 - 4z + 7\right) + \left(2z^2 + 2z - 1\right) - \left(8z^2 - 4z + 16\right)$$

a. $-9z^2 + 2z - 10$
b. $13z^2 + 10z - 10$
c. $-9z^2 + 2z - 24$
d. $-9z^2 + 10z - 24$
e. $9z^2 - 2z + 10$

ANSWER: a

17. Complete the operation and simplify if necessary.

$$\frac{8}{x} - \frac{2}{x}$$

a. 6
b. $\frac{6}{2x}$
c. $\frac{10}{x}$
d. $\frac{5}{x}$
e. $\frac{6}{x}$

ANSWER: e

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