Test Bank for Pathway to Introductory Statistics 2nd Lehmann

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MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Respond to the question by using complete sentences.

1) Let n be the number (in thousands) of fans who attend a baseball game. What does n = 35 mean in this situation?
   A) 35 fans attended the baseball game.
   B) 35,000 fans attended the baseball game.
   C) There are 35,000 seats at the baseball field.
   D) There are 35 seats at the baseball field.

   Answer: B

2) Let p be the percentage of college students who participate in athletics. The value of p is about 35 for 2006. What does p = 35 mean in this situation?
   A) In 2006, about 35 college students participated in athletics.
   B) In 2006, about 35% of college students participated in athletics.
   C) In 2006, about 0.35% of college students participated in athletics.
   D) In 2006, college students participated in athletics.

   Answer: B

3) Let p be a company's annual profit (in millions of dollars). What does p = –10 mean in this situation?
   A) The company lost $10.
   B) The company made $10.
   C) The company made $10 million.
   D) The company lost $10 million.

   Answer: D

4) Let t be the number of years since 2000. What does t = 1 mean in this situation?
   A) The statement t = 1 represents the year 1999.
   B) The statement t = –1 represents the year 1999.
   C) The statement t = –1 represents the year 2001.
   D) The statement t = 1 represents the year 2001.

   Answer: D

5) Let t be the number of years since 2000. What does t = –7 mean in this situation?
   A) The statement t = 7 represents the year 2007.
   B) The statement t = –7 represents the year 1993.
   C) The statement t = –7 represents the year 2007.
   D) The statement t = 7 represents the year 1993.

   Answer: B

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Choose a variable name for the given quantity. Give two numbers that the variable can represent and two numbers that it cannot represent.

6) The weight (in pounds) that a person weighs after a diet

   Answer: w; 119, 202; 0, –40 (answers may vary)

7) The annual salary (in thousands of dollars) of a college graduate

   Answer: s; 35, 52; –74, –14 (answers may vary)

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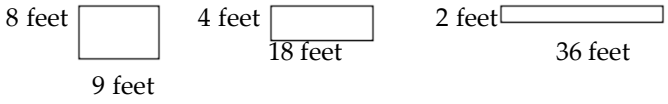
Solve the problem.

8) A rectangle has an area of 72 square feet. Let W be the width (in feet), L be the length (in feet), and A be the area (in square feet).

a. Sketch three possible rectangles of area 72 square feet.
b. Which of the symbols W, L, and A are variables?
c. Which of the symbols W, L, and A are constants?

Answer: a. The rectangles are not drawn to scale. Answers may vary.

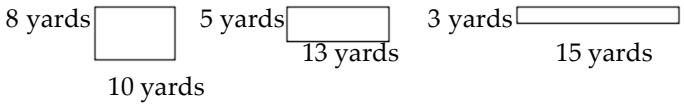


b. W, L
c. A

9) The perimeter of a rectangle is the sum of the lengths of all four sides. A rectangle has a perimeter of 36 yards. Let W be the width, L be the length, and P be the perimeter, all units in yards.

a. Sketch three possible rectangles of perimeter 36 yards.
b. Which of the symbols W, L, and P are variables?
c. Which of the symbols W, L, and P are constants?

Answer: a. The rectangles are not drawn to scale. Answers may vary.

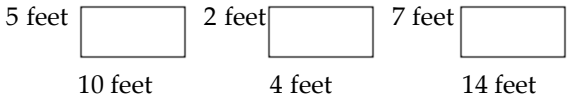


b. W, L
c. P

10) The length of a rectangle is twice the width. Let W be the width, L be the length, and P be the perimeter, all units in feet.

a. Sketch three possible rectangles in which the length is twice the width.
b. Which of the symbols W, L, and P are variables?
c. Which of the symbols W, L, and P are constants?

Answer: a. The rectangles are not drawn to scale. Answers may vary.



b. W, L, P
c. None

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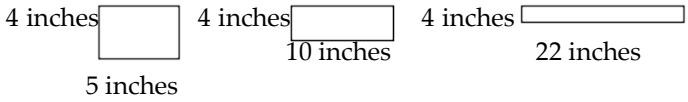
11) The width of a rectangle is 4 inches. Let W be the width (in inches), L be the length (in inches), and A be the area (in square inches).

a. Sketch three possible rectangles of width 4 inches.
b. Which of the symbols W, L, and A are variables?
c. Which of the symbols W, L, and A are constants?

Answer: a. The rectangles are not drawn to scale. Answers may vary.

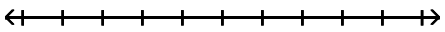


b. L, A
c. W

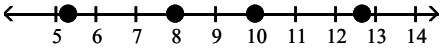
MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Graph the numbers on a number line.

12) $\left\{-\frac{11}{3}, -1, 1, \frac{11}{3}\right\}$



A)



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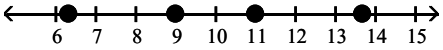

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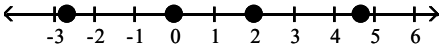
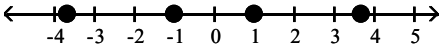
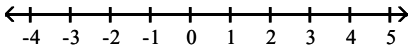


D)

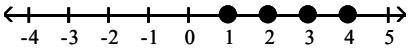


Answer: D

13) {–3.75, –1, 1, 3.25}



A)



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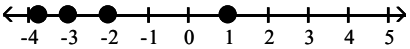

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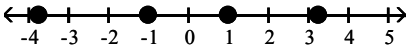

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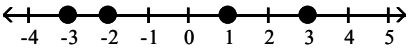

Answer: C

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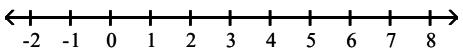
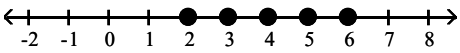
14) Counting numbers between 2 and 7



A)



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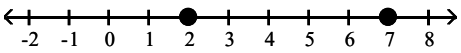

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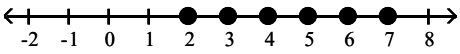
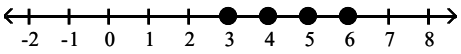
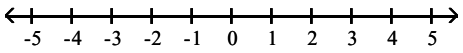


D)

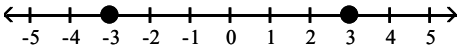


Answer: D

15) Integers between –3 and 3, inclusive



A)



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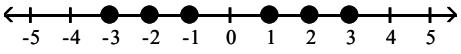

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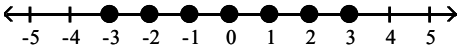
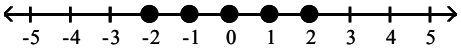
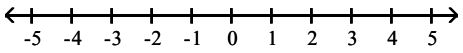


D)

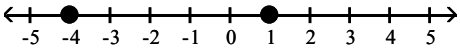


Answer: C

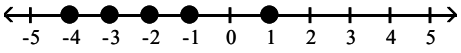
16) Integers between –4 and 1, inclusive



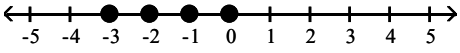
A)



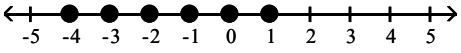
B)



C)

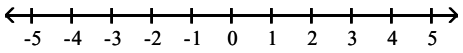


D)

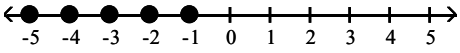


Answer: D

17) Negative integers between –5 and 5



A)



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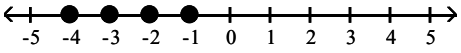

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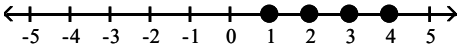
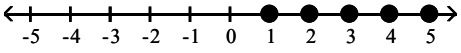


D)



Answer: B

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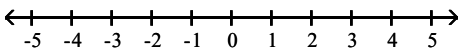
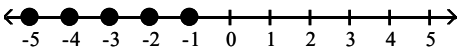
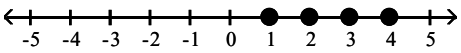
18) Positive integers between –5 and 5



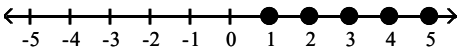
A)



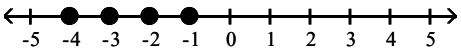
B)



C)



D)



Answer: B

Which of the numbers are the given type of number?

19) 19, $\sqrt{7}$, –15, 0, $\frac{5}{7}$, $-\frac{7}{5}$, 7.6, $\sqrt{4}$

Integers

A) 19, 0, $\sqrt{4}$ B) 19, –15, 0 C) 19, –15, 0, $\sqrt{4}$ D) 19, 0

Answer: C

20) 4, $\sqrt{5}$, –11, 0, $\frac{1}{2}$, – 2, 5.6, $\sqrt{25}$

Counting numbers

A) 4, $\sqrt{25}$ B) 4, 0 C) –11, 0, 4 D) 4, 0, $\sqrt{25}$

Answer: A

21) 15, $\sqrt{7}$, –6, 0, $\frac{0}{7}$, $\sqrt{16}$

Real numbers

A) 15, $\sqrt{7}$, –6, 0, $\frac{0}{7}$, $\sqrt{16}$ B) 15, –6, 0, $\frac{0}{7}$, $\sqrt{16}$

C) 15, –6, 0, $\frac{0}{7}$ D) 15, –6, 0, $\sqrt{16}$

Answer: A

22) 19, $\sqrt{5}$, –2, 0, $\frac{0}{7}$, $\sqrt{4}$, 0.25

Rational numbers

A) 19, –2, 0, $\frac{0}{7}$, $\sqrt{4}$, 0.25 B) $\sqrt{5}$, $\sqrt{4}$

C) 19, 0, $\sqrt{4}$ D) $\sqrt{5}$, $\frac{0}{7}$, 0.25

Answer: A

23) 15, $\sqrt{5}$, –6, 0, $\frac{0}{7}$, $\sqrt{9}$, 0.05

Irrational numbers

A) $\sqrt{5}$, $\sqrt{9}$ B) $\sqrt{5}$ C) $\sqrt{5}$, $\sqrt{9}$, 0.05 D) $\sqrt{5}$, 0.05

Answer: B

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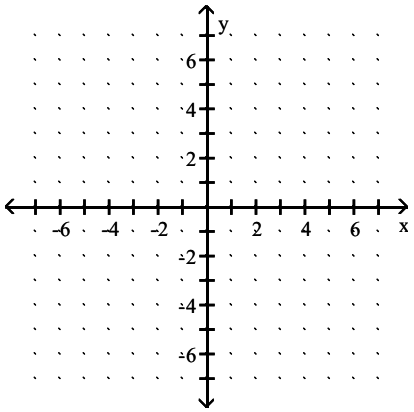
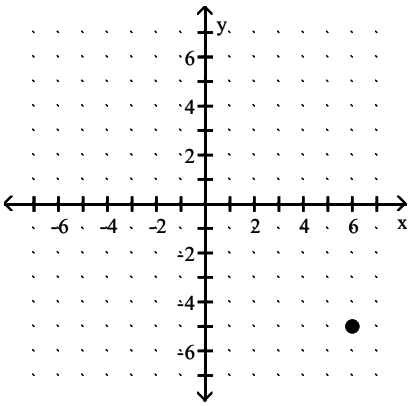
Plot the given point in a coordinate system.

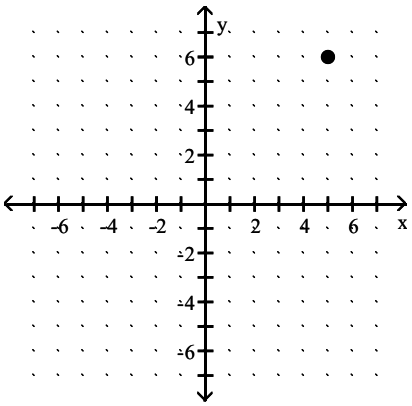
24) (6, 5)



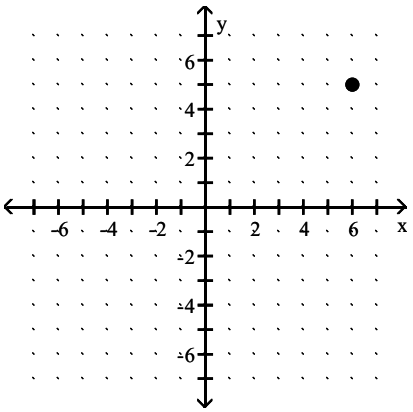
A)



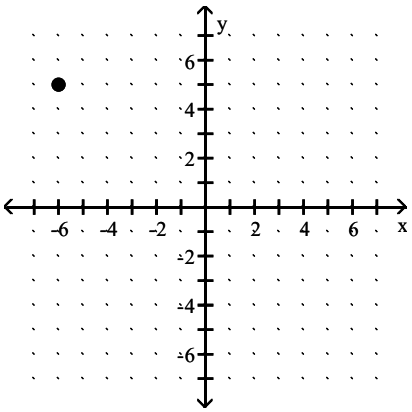
B)



C)



D)



Answer: C

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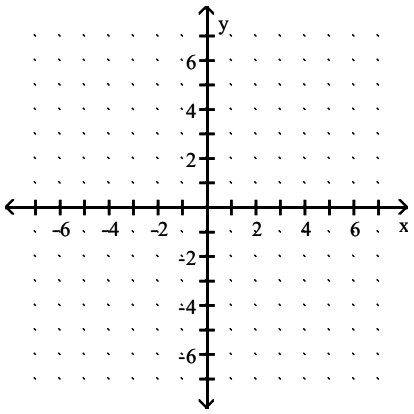
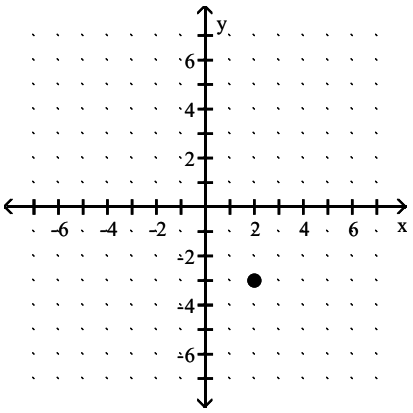
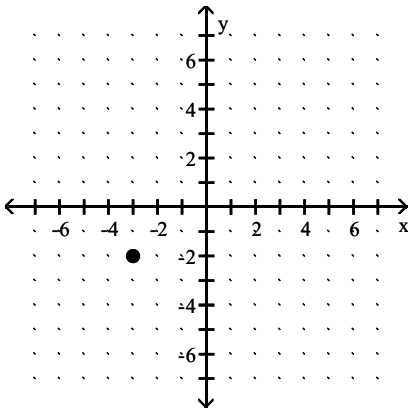
25) (–3, 2)



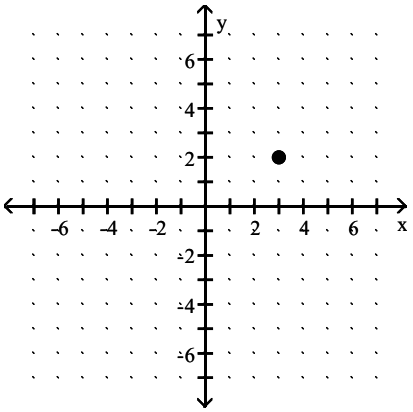
A)



B)



C)



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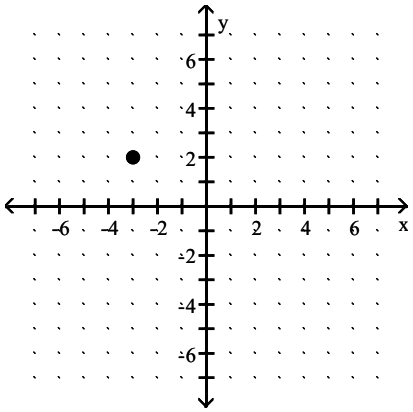

Answer: D

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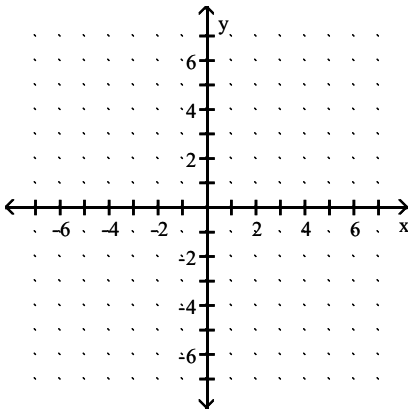
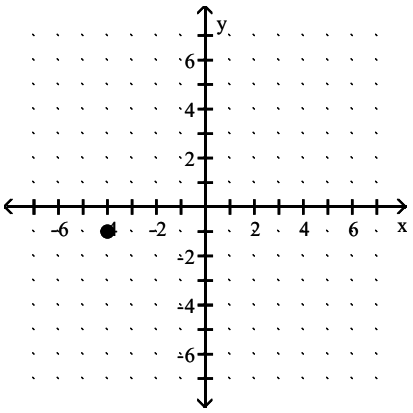
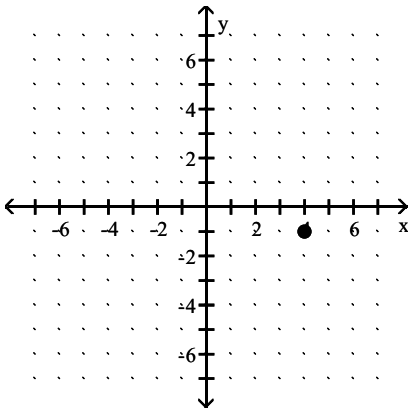
26) (4, –1)



A)



B)



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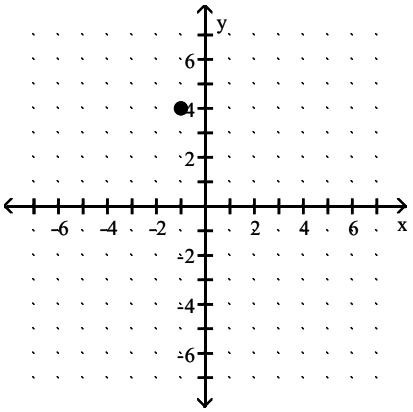
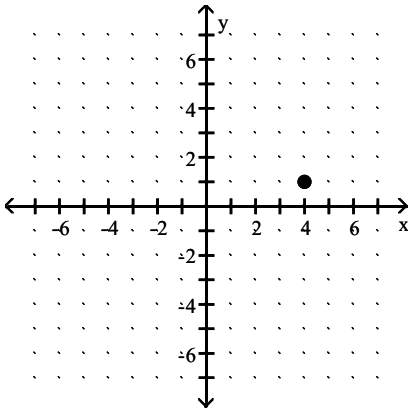


D)



Answer: B

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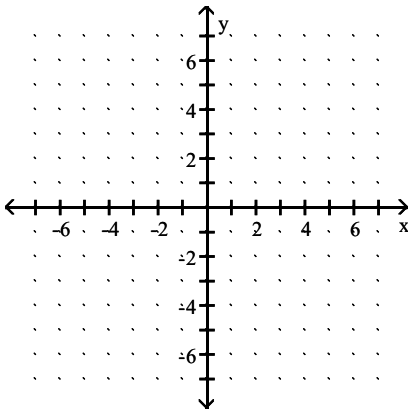
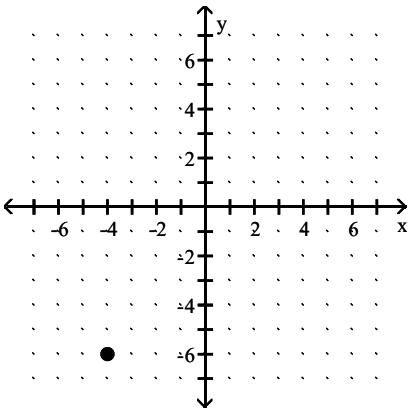
27) (–4, –6)



A)



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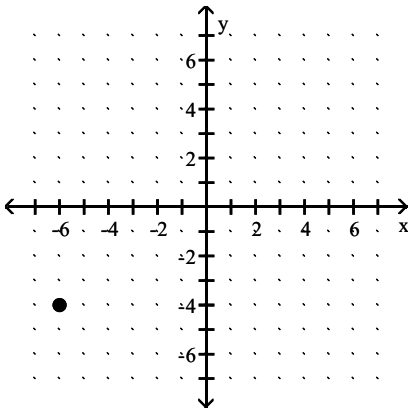

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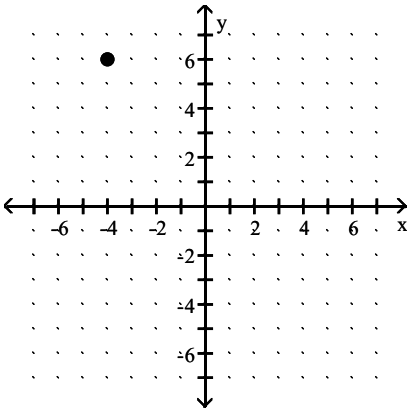
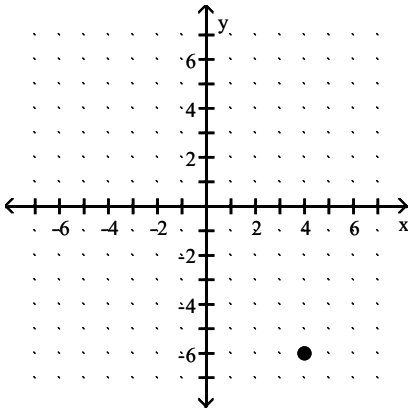


D)



Answer: A

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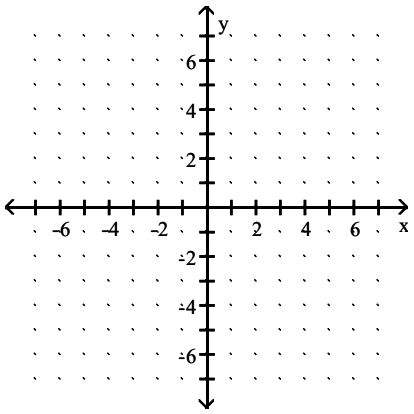
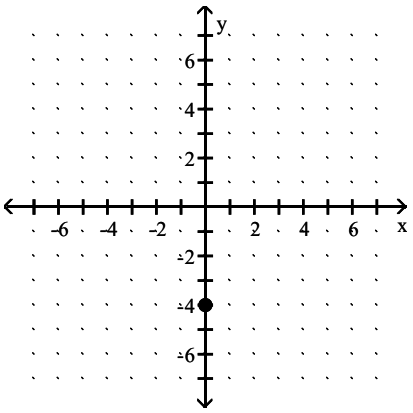
28) (0, 4)



A)



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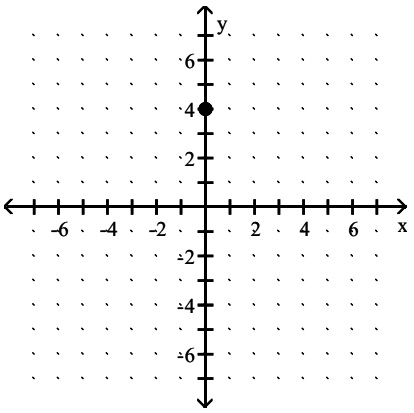

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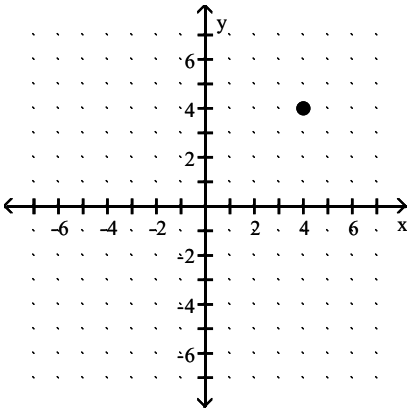
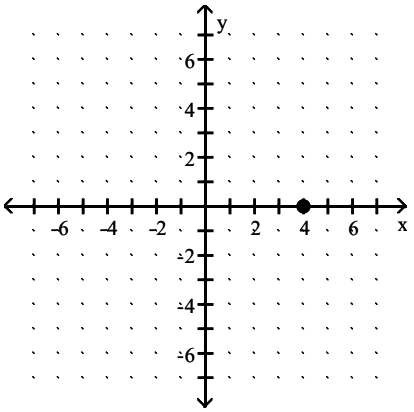


D)



Answer: B

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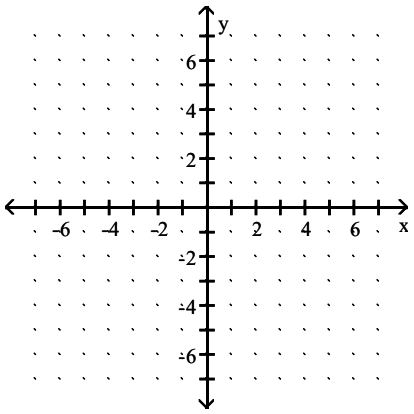
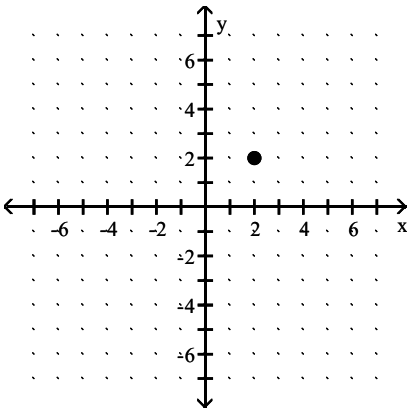
29) (2, 0)



A)



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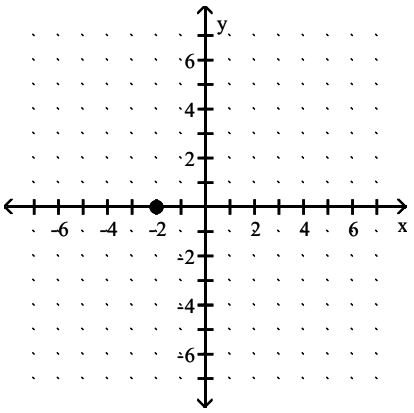

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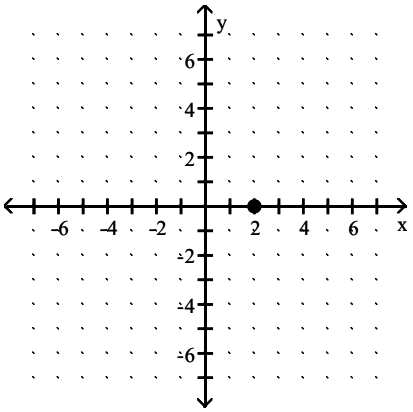
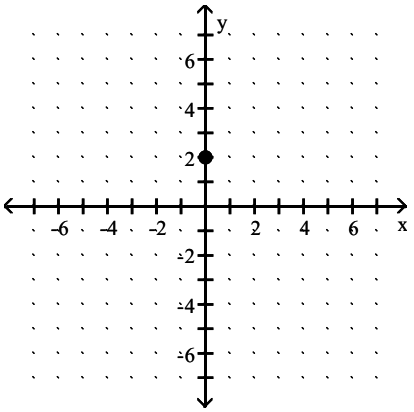


D)



Answer: C

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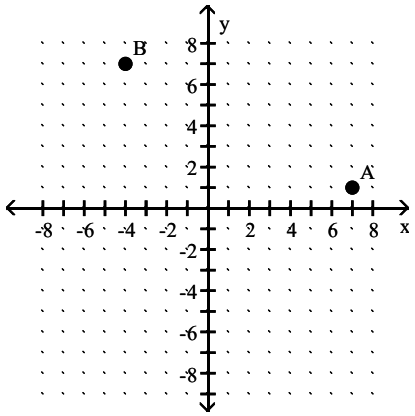
Identify the coordinates of each point labeled in the figure.

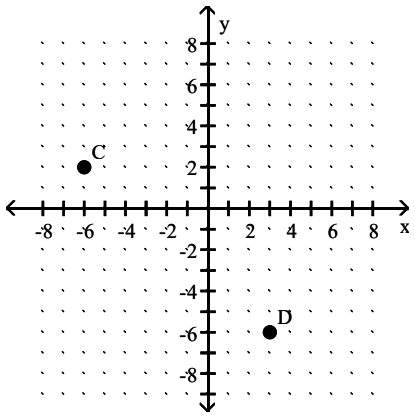
30)



A) A(7, 1); B(7, –4) B) A(7, 1); B(–4, 7) C) A(7, 7); B (1, 7) D) A(1, 30); B(7, –4)

Answer: B

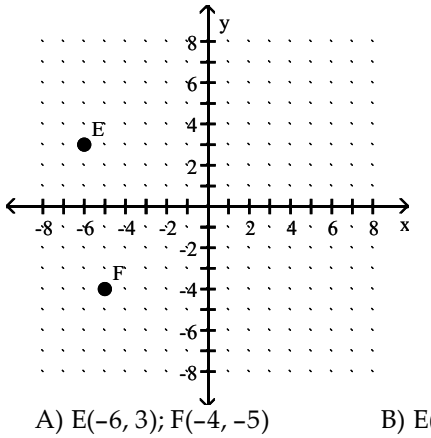
31)



A) C(–6, 2); D(3, –6) B) C(–6, –6); D(2, –6) C) C(2, 4); D(–6, 3) D) C(–6, 2); D(–6, 3)

Answer: A

32)



A) E(–6, 3); F(–4, –5) B) E(–6, 3); F(–5, –4) C) E(–6, –4); F(3, –4) D) E(3, 4); F(–4, –5)

Answer: B

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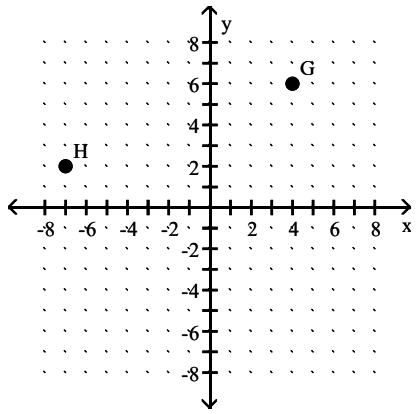
33)



A) G(4, 6); H(2, –7) B) G(4, 2); H(6, 2) C) G(4, 6); H(–7, 2) D) G(6, 24); H(2, –7)

Answer: C

Decide whether the given inequality is true or false.

34) $-4 > -6$

A) True B) False

Answer: A

35) $-6 \leq -1$

A) True B) False

Answer: A

36) $8 \leq 8$

A) True B) False

Answer: A

37) $-3 > -3$

A) True B) False

Answer: B

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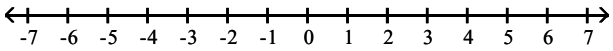
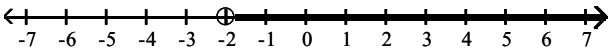
Graph the given inequality.

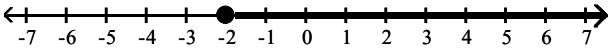
38) $x > -2$



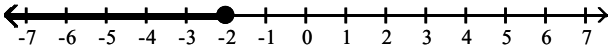
A)



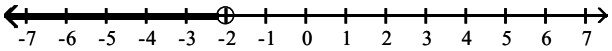
B)



C)

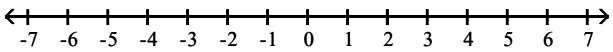


D)

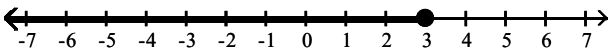


Answer: A

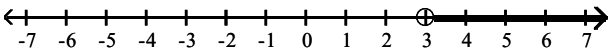
39) $x < 3$



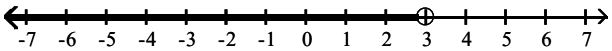
A)



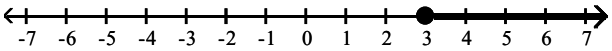
B)



C)



D)



Answer: C

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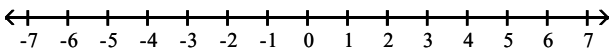
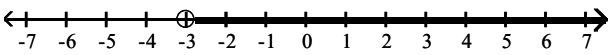
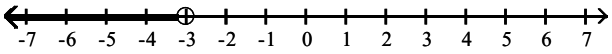
40) $x \geq -3$



A)



B)



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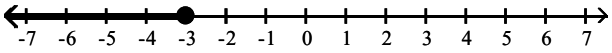
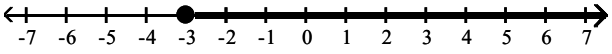
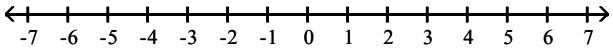


D)

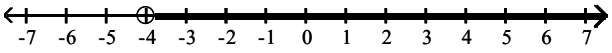


Answer: D

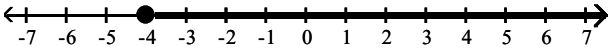
41) $x \leq -4$



A)



B)



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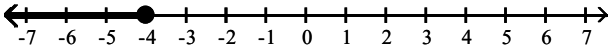
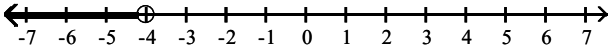


D)



Answer: C

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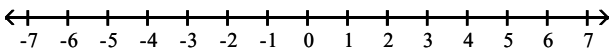
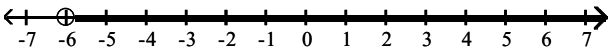
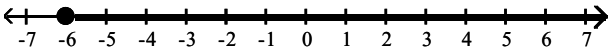
42) $-6 < x$



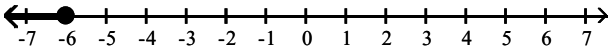
A)



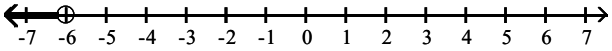
B)



C)



D)



Answer: A

Evaluate the expression for the given value.

43) $41 + y$ for $y = 32$

A) 37 B) 64 C) 73 D) 55

Answer: C

44) $x - x$ for $x = 35$

A) 35 B) –1 C) 1 D) 0

Answer: D

45) $x \div 3$ for $x = 168$

A) 58 B) 54 C) 59 D) 56

Answer: D

46) $y \div y$ for $y = 3$

A) 0 B) –1 C) 3 D) 1

Answer: D

47) $0 \div x$ for $x = 162$

A) 1 B) 0 C) 162 D) –1

Answer: B

48) $5x$, for $x = 4$

A) $\frac{5}{4}$ B) $\frac{4}{5}$ C) 20 D) 9

Answer: C

49) $x(9)$, for $x = 3$

A) $\frac{3}{9}$ B) $\frac{9}{3}$ C) 27 D) 12

Answer: C

Access Complete Test Bank for Pathway to Introductory Statistics 2nd Lehmann

Solve the problem.

50) Each ounce of gold is worth $39.

(i) Complete the table to find an expression that describes the total value (in dollars) of n ounces of gold. Show the arithmetic to help you see a pattern.

(ii) Evaluate the expression you found in part (i) for n =5. What does your result mean in this situation?

Number of Ounces and Total Value	
Number of Ounces	Total Value (dollars)
1	
2	
3	
4	
n	

A) (i)

Number of Ounces and Total Value	
Number of Ounces	Total Value (dollars)
1	39 + 1
2	39 + 2
3	39 + 3
4	39 + 4
n	39 + n

(ii) 44; $44 is the total value of 5 ounces of gold priced at $39 per ounce.

B) (i)

Number of Ounces and Total Value	
Number of Ounces	Total Value (dollars)
1	$39 \cdot 1$
2	$39 \cdot 2$
3	$39 \cdot 3$
4	$39 \cdot 4$
n	39n

(ii) 195; $195 is the total value of 5 ounces of gold priced at $39 per ounce.

C) (i)

Number of Ounces and Total Value	
Number of Ounces	Total Value (dollars)
1	39 – 1
2	39 – 2
3	39 – 3
4	39 – 4
n	39 – n

(ii) 34; $34 is the total value of 5 ounces of gold priced at $39 per ounce.

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D) (i)

Number of Ounces and Total Value	
Number of Ounces	Total Value (dollars)
1	39 ÷ 1
2	39 ÷ 2
3	39 ÷ 3
4	39 ÷ 4
n	39 ÷ n

(ii) 7.80; $7.80 is the total value of 5 ounces of gold priced at $39 per ounce.

Answer: B

51) Each customer of a photography studio pays a sitting fee of $25.
(i) Complete the table to find an expression that describes the total cost (in dollars) of a photograph package plus the sitting fee if a customer pays p dollars for a photograph package. Show the arithmetic to help you see a pattern.
(ii) Evaluate the expression you found in part (i) for p = 162. What does your result mean in this situation?

Cost of Photograph Package and Total Cost	
Cost of Photograph Package	Total Cost (dollars)
94	
95	
96	
97	
p	

A) (i)

Cost of Photograph Package and Total Cost	
Cost of Photograph Package	Total Cost (dollars)
94	94 + 25
95	95 + 25
96	96 + 25
97	97 + 25
p	p + 25

(ii) 4050; If the photograph package is $162, then the total cost is $4050.

B) (i)

Cost of Photograph Package and Total Cost	
Cost of Photograph Package	Total Cost (dollars)
94	94 + 25
95	95 + 25
96	96 + 25
97	97 + 25
p	p + 25

(ii) 187; If the photograph package is $162, then the total cost is $187.

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C) (i)

Cost of Photograph Package and Total Cost	
Cost of Photograph Package	Total Cost (dollars)
94	94 + 25
95	95 + 25
96	96 + 25
97	97 + 25
p	p + 25

(ii) 137; If the photograph package is $162, then the total cost is $137.

D) (i)

Cost of Photograph Package and Total Cost	
Cost of Photograph Package	Total Cost (dollars)
94	94 + 25
95	95 + 25
96	96 + 25
97	97 + 25
p	p + 25

(ii) 6.48; If the photograph package is $162, then the total cost is $6.48.

Answer: B

Let x be a number. Translate the English phrase or sentence into a mathematical expression.

52) The total of 100 and a number

A) 100 – x B) 100 + x C) 100 D) 100x

Answer: B

53) The sum of a number and 62

A) 62x B) x + 62 C) x – 62 D) 62

Answer: B

54) 3 times a number

A) 3 ÷ x B) 3 + x C) 3 – x D) 3x

Answer: D

55) 24 less than a number

A) 24 ÷ x B) x – 24 C) 24 – x D) x + 24

Answer: B

56) The product of 3 and a number

A) 3 ÷ x B) 3 – x C) 3x D) 3 + x

Answer: C

57) Subtract 46 from a number

A) 46 B) x – 46 C) 46 – x D) 46x

Answer: B

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58) The difference of a number and 43

A) $x - 43$ B) $43 - x$ C) $43x$ D) 43

Answer: A

59) 51 decreased by a number

A) $x - 51$ B) $51 \div x$ C) $51 + x$ D) $51 - x$

Answer: D

60) Divide a number by 65

A) $65 \div x$ B) $x - 65$ C) $x \div 65$ D) $65x$

Answer: C

61) The quotient of 73 and a number

A) $x \div 73$ B) $73 \div x$ C) $x - 73$ D) $73 - x$

Answer: B

62) A number increased by 39

A) $x + 39$ B) $39 \div x$ C) $39x$ D) $x - 39$

Answer: A

63) Nine more than a number

A) $x + 9$ B) $x \div 9$ C) $9x$ D) $x - 9$

Answer: A

64) Seven less than a number

A) $x \div 7$ B) $x - 7$ C) $7x$ D) $7 - x$

Answer: B

65) Divide a number by ten

A) $x \div 10$ B) $10 - x$ C) $10 \div x$ D) $10x$

Answer: A

66) A number decreased by two

A) $\frac{2}{x}$ B) $x + 2$ C) $2 - x$ D) $x - 2$

Answer: D

Let x be a number. Translate the expression into an English phrase.

67) $26 + x$

A) The difference of 26 and a number
B) Divide 26 by a number.
C) The total of 26 and a number
D) Multiply 26 by a number.

Answer: C

68) $x + 125$

A) The sum of a number and 125
B) The product of a number and 125
C) The difference between a number and 125
D) The quotient of a number and 125

Answer: A

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69) 8x

A) 8 divided by a number
B) 8 minus a number
C) 8 times a number
D) 8 plus a number

Answer: C

70) x – 57

A) 57 increased by a number
B) 57 less a number
C) 57 plus a number
D) 57 less than a number

Answer: D

71) 7x

A) The product of 7 and a number
B) The quotient of 7 and a number
C) Divide a number by 7.
D) The sum of 7 and a number

Answer: A

72) x – 51

A) Subtract a number from 51
B) The ratio of 51 and a number
C) 51 multiplied by a number
D) Subtract 51 from a number

Answer: D

73) x – 53

A) The difference of a number and 53
B) The quotient of a number and 53
C) The sum of a number and 53
D) The difference of 53 and a number

Answer: A

74) 71 – x

A) 71 less than a number
B) A number decreased by 71
C) A number less 71
D) 71 decreased by a number

Answer: D

75) x ÷ 28

A) The ratio of 28 to a number
B) Divide a number by 28
C) Divide 28 by a number.
D) The quotient of 28 and a number

Answer: B

76) 75 ÷ x

A) Divide a number by 75.
B) The ratio of a number to 75
C) The quotient of a number and 75
D) The quotient of 75 and a number

Answer: D

77) x + 66

A) A number multiplied by 66
B) A number divided by 66
C) A number increased by 66
D) A number decreased by 66

Answer: C

78) x + 8

A) Eight divided by a number
B) Eight less than a number
C) Eight times a number
D) Eight more than a number

Answer: D

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79) $x - 1$

A) One decreased by a number
B) One more than a number
C) One less than a number
D) One minus a number

Answer: C

80) $5 \div x$

A) Five added to a number
B) Five divided by a number
C) Five multiplied by a number
D) Five decreased by a number

Answer: B

81) $x - 9$

A) A number increased by nine
B) nine minus a number
C) A number plus nine
D) A number decreased by nine

Answer: D

Evaluate the expression for the given values.

82) $x + y$ for $x = 25, y = 13$

A) 56 B) 83 C) 38 D) 74

Answer: C

83) $x \div y$ for $x = 270, y = 5$

A) 52 B) 57 C) 54 D) 56

Answer: C

84) xy, for $x = 3, y = 7$

A) 21 B) $\frac{3}{7}$ C) $\frac{7}{3}$ D) 10

Answer: A

85) $x \cdot y$ for $x = 2, y = 68$

A) 236 B) 126 C) 136 D) 130

Answer: C

Solve the problem.

86) Translate the phrase into a mathematical expression then evaluate the expression for $x = 53$ and $y = 14$.

The sum of x and y

A) $x + y$; 76 B) $x + y$; 85 C) $x + y$; 67 D) $x + y$; 94

Answer: C

87) Translate the phrase into a mathematical expression then evaluate the expression for $x = 450$ and $y = 9$.

The quotient of x and y

A) $x \div y$; 48 B) $x \div y$; 53 C) $x \div y$; 52 D) $x \div y$; 50

Answer: D

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88) Translate the phrase into a mathematical expression then evaluate the expression for $x = 7$ and $y = 9$.

The product of x and y

A) $x \div y; \frac{7}{9}$ B) $x + y; 16$ C) $y \div x; \frac{9}{7}$ D) $xy; 63$

Answer: D

89) For the period 2000 – 2006, if M is the average math SAT score (in points) for a certain year, then the average verbal SAT score (in points) for that year is approximately $M + t$ where t is the number of years since 2000. The average math SAT score was 489 points in 2005. Estimate the average verbal SAT score in 2005.

A) 499 points B) 494 points C) 489 points D) 504 points

Answer: B

90) A person drives 62t miles in t hours.
(i) Evaluate 62t for $t = 1$, $t = 2$, $t = 3$, and $t = 4$. Describe the meaning of your results.
(ii) Refer to your results to part (i) to determine at what speed the person is traveling.

A) (i) 62, 31.0, 20.7, 15.5; The person drives 62 miles in 1 hour, 31.0 miles in 2 hours, 20.7 miles in 3 hours, 15.5 miles in 4 hours.
(ii) The person is driving 62 miles per hour.

B) (i) 62, 124, 186, 248; The person drives 62 miles in 1 hour, 124 miles in 2 hours, 186 miles in 3 hours, 248 miles in 4 hours.
(ii) The person is driving 62 miles per hour.

C) (i) 63, 64, 65, 66; The person drives 63 miles in 1 hour, 64 miles in 2 hours, 65 miles in 3 hours, 66 miles in 4 hours.
(ii) The person is driving 63 miles per hour.

D) (i) 124, 186, 248, 310; The person drives 124 miles in 1 hour, 186 miles in 2 hours, 248 miles in 3 hours, 310 miles in 4 hours.
(ii) The person is driving 62 miles per hour.

Answer: B

91) Kevin and Amir share in the profits of a pet supplies store. If the total profit is $30,000 and p is the amount of profit Kevin receives, write an expression for the amount Amir receives.

A) $30,000 – p B) p – $30,000 C) $30,000 + p D) p + $30,000

Answer: A

92) Keerti found that he had y quarters in his pocket. Write an expression that represents this quantity of money in cents.

A) $\frac{25}{y}$ B) 25y C) $\frac{y}{25}$ D) y + 25

Answer: B

93) A motorcycle shop maintains an inventory of three times as many new bikes as used bikes so that if n is the number of new bikes, there are $n \div 3$ used bikes at the shop. If there are 75 new bikes, how many used bikes are now in stock?

A) 225 used bikes B) 50 used bikes C) 25 used bikes D) 38 used bikes

Answer: C

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Write the number as a product of primes.

94) 45

A) $3 \cdot 5$ B) $3 \cdot 3 \cdot 5$ C) $9 \cdot 3$ D) $5 \cdot 5$

Answer: B

95) 45

A) $3 \cdot 5 \cdot 5$ B) $3 \cdot 5$ C) $3 \cdot 3$ D) $3 \cdot 3 \cdot 5$

Answer: D

96) 115

A) $5 \cdot 23$ B) $5 \cdot 25$ C) $22 \cdot 7$ D) $6 \cdot 25$

Answer: A

97) 105

A) $5 \cdot 5 \cdot 3$ B) $3 \cdot 5 \cdot 7 \cdot 7$ C) $3 \cdot 5 \cdot 7$ D) $3 \cdot 3 \cdot 7$

Answer: C

98) 90

A) $2 \cdot 2 \cdot 3 \cdot 5$ B) $2 \cdot 3 \cdot 5$ C) $2 \cdot 3 \cdot 3 \cdot 5$ D) $3 \cdot 3 \cdot 3 \cdot 5$

Answer: C

Simplify.

99) $\frac{3}{12}$

A) $\frac{3}{12}$ B) $\frac{1}{3}$ C) $\frac{4}{3}$ D) $\frac{1}{4}$

Answer: D

100) $\frac{12}{27}$

A) $\frac{4}{3}$ B) $\frac{12}{27}$ C) $\frac{4}{9}$ D) $\frac{3}{9}$

Answer: C

101) $\frac{77}{88}$

A) $\frac{7}{11}$ B) $\frac{7}{8}$ C) $\frac{77}{88}$ D) $\frac{11}{8}$

Answer: B

102) $\frac{30}{70}$

A) $\frac{30}{70}$ B) $\frac{10}{7}$ C) $\frac{3}{10}$ D) $\frac{3}{7}$

Answer: D

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103) $\frac{60}{100}$

A) $\frac{20}{5}$ B) $\frac{3}{5}$ C) $\frac{60}{100}$ D) $\frac{3}{20}$

Answer: B

104) $\frac{55}{90}$

A) $\frac{55}{90}$ B) $\frac{11}{5}$ C) $\frac{11}{18}$ D) $\frac{5}{18}$

Answer: C

105) $\frac{85}{60}$

A) $\frac{12}{5}$ B) $\frac{12}{17}$ C) $\frac{85}{60}$ D) $\frac{17}{12}$

Answer: D

106) $\frac{27}{36}$

A) $\frac{9}{4}$ B) $\frac{4}{3}$ C) $\frac{3}{4}$ D) $\frac{1}{9}$

Answer: C

Perform the indicated operation.

107) $\frac{1}{5} \cdot \frac{2}{9}$

A) $\frac{45}{2}$ B) $\frac{10}{9}$ C) $\frac{3}{14}$ D) $\frac{2}{45}$

Answer: D

108) $\frac{9}{8} \cdot \frac{1}{6}$

A) $\frac{1}{16}$ B) $\frac{49}{48}$ C) $\frac{19}{16}$ D) $\frac{3}{16}$

Answer: D

109) $\frac{37}{18} \cdot 2$

A) $\frac{73}{18}$ B) 4 C) $\frac{28}{9}$ D) $\frac{37}{9}$

Answer: D

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110) $\frac{2}{11} \div \frac{7}{10}$

A) $\frac{18}{77}$ B) $\frac{19}{77}$ C) $\frac{20}{75}$ D) $\frac{20}{77}$

Answer: D

111) $\frac{7}{15} \div \frac{9}{10}$

A) $\frac{14}{27}$ B) $\frac{12}{27}$ C) $\frac{14}{25}$ D) $\frac{13}{27}$

Answer: A

112) $\frac{7}{15} \div \frac{1}{2}$

A) $\frac{14}{15}$ B) $\frac{8}{17}$ C) $\frac{30}{7}$ D) $\frac{7}{30}$

Answer: A

113) $\frac{15}{8} \div \frac{20}{6}$

A) $\frac{9}{8}$ B) $\frac{9}{20}$ C) $\frac{9}{16}$ D) $\frac{18}{32}$

Answer: C

114) $\frac{32}{7} \div \frac{4}{7}$

A) $\frac{13}{2}$ B) 8 C) 7 D) 9

Answer: B

115) $\frac{14}{5} \div 7$

A) $\frac{2}{5}$ B) $\frac{3}{5}$ C) $\frac{2}{4}$ D) $\frac{1}{5}$

Answer: A

116) $\frac{1}{5} + \frac{4}{5}$

A) $\frac{1}{2}$ B) $\frac{5}{10}$ C) $\frac{5}{5}$ D) 1

Answer: D

117) $\frac{1}{9} + \frac{5}{9}$

A) $\frac{3}{4}$ B) $\frac{2}{3}$ C) $\frac{1}{2}$ D) $\frac{1}{3}$

Answer: B

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118) $\frac{9}{25} + \frac{9}{25}$

A) $\frac{18}{25}$ B) $\frac{17}{24}$ C) $\frac{19}{26}$ D) $\frac{17}{25}$

Answer: A

119) $\frac{4}{8} - \frac{1}{8}$

A) $\frac{3}{4}$ B) $\frac{3}{8}$ C) $\frac{1}{2}$ D) $\frac{3}{16}$

Answer: B

120) $\frac{13}{14} - \frac{3}{14}$

A) $\frac{10}{0}$ B) $\frac{5}{7}$ C) $\frac{10}{28}$ D) $\frac{10}{14}$

Answer: B

121) $\frac{34}{59} - \frac{27}{59}$

A) $\frac{7}{59}$ B) $\frac{7}{118}$ C) $\frac{918}{59}$ D) $\frac{61}{59}$

Answer: A

122) $\frac{6}{17} + \frac{6}{17}$

A) $\frac{11}{16}$ B) $\frac{12}{17}$ C) $\frac{13}{18}$ D) $\frac{11}{17}$

Answer: B

123) $\frac{11}{70} + \frac{13}{70}$

A) $\frac{12}{35}$ B) $\frac{11}{35}$ C) $\frac{11}{34}$ D) $\frac{13}{36}$

Answer: A

124) $\frac{3}{8} + \frac{1}{7}$

A) $\frac{29}{15}$ B) $\frac{4}{56}$ C) $\frac{29}{56}$ D) $\frac{4}{15}$

Answer: C

125) $\frac{7}{9} - \frac{3}{8}$

A) $\frac{4}{9}$ B) $\frac{29}{72}$ C) $\frac{29}{9}$ D) $\frac{1}{18}$

Answer: B

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126) $\frac{1}{8} - \frac{1}{11}$

A) $\frac{3}{8}$ B) $\frac{1}{8}$ C) $\frac{3}{88}$ D) $\frac{1}{88}$

Answer: C

127) $\frac{4}{7} + \frac{1}{5}$

A) $\frac{27}{35}$ B) $\frac{33}{35}$ C) $\frac{1}{7}$ D) $\frac{5}{12}$

Answer: A

128) $\frac{5}{6} - \frac{1}{4}$

A) $\frac{7}{12}$ B) $\frac{2}{3}$ C) $\frac{7}{3}$ D) $\frac{1}{6}$

Answer: A

129) $\frac{1}{5} + \frac{1}{30}$

A) $\frac{2}{35}$ B) $\frac{7}{30}$ C) $\frac{1}{15}$ D) $\frac{6}{25}$

Answer: B

130) $\frac{5}{14} - \frac{1}{10}$

A) $\frac{2}{35}$ B) $\frac{12}{35}$ C) $\frac{9}{70}$ D) $\frac{9}{35}$

Answer: D

131) $\frac{5}{16} - \frac{3}{40}$

A) $\frac{1}{40}$ B) $\frac{19}{640}$ C) $\frac{11}{40}$ D) $\frac{19}{80}$

Answer: D

132) $\frac{9}{14} + \frac{1}{6}$

A) $\frac{17}{21}$ B) $\frac{2}{3}$ C) $\frac{17}{10}$ D) $\frac{5}{21}$

Answer: A

133) $\frac{9}{5} - \frac{8}{15}$

A) $\frac{19}{75}$ B) $\frac{19}{15}$ C) $\frac{19}{5}$ D) $\frac{1}{15}$

Answer: B

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134) $4 + \frac{3}{8}$

A) $\frac{7}{8}$ B) $\frac{53}{8}$ C) 3 D) $\frac{35}{8}$

Answer: D

135) $2 - \frac{3}{4}$

A) $\frac{13}{4}$ B) $\frac{5}{4}$ C) $-\frac{11}{4}$ D) $\frac{23}{4}$

Answer: B

136) $\frac{21}{5} - 4$

A) $\frac{17}{5}$ B) $\frac{101}{5}$ C) 17 D) $\frac{1}{5}$

Answer: D

137) $10 - \frac{7}{8}$

A) $\frac{87}{8}$ B) $\frac{3}{8}$ C) $\frac{7}{2}$ D) $\frac{73}{8}$

Answer: D

Perform the indicated operation. If the fraction is undefined, say so.

138) $\frac{3}{3}$

A) $\frac{1}{3}$ B) 0 C) 3 D) 1

Answer: D

139) $\frac{20}{1}$

A) $\frac{1}{20}$ B) 20 C) 19 D) undefined

Answer: B

140) $\frac{0}{26}$

A) 26 B) $\frac{1}{26}$ C) 0 D) undefined

Answer: C

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141) $\frac{33}{0}$

A) $\frac{1}{33}$ B) 0 C) 33 D) undefined

Answer: D

142) $\frac{123}{1}$

A) 0 B) $\frac{1}{123}$ C) 123 D) undefined

Answer: C

143) $\frac{175}{0}$

A) $\frac{1}{8}$ B) 0 C) 1 D) undefined

Answer: D

144) $\frac{6116}{6116}$

A) 1 B) $\frac{1}{9116}$ C) 0 D) undefined

Answer: A

145) $\frac{119}{122} \cdot \frac{122}{119}$

A) 122 B) 0 C) 1 D) undefined

Answer: C

146) $\frac{129}{142} - \frac{129}{142}$

A) 1 B) 0 C) $\frac{1}{142}$ D) undefined

Answer: B

Use a calculator to compute. Round the result to two decimal places.

147) $\frac{4}{47} \cdot \frac{4}{61}$

A) 0.01 B) 0.46 C) 0.15 D) 0.05

Answer: A

148) $\frac{13}{16} \cdot \frac{21}{23}$

A) 0.74 B) 0.87 C) 7.00 D) 0.09

Answer: A

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149) $\frac{32}{35} \div \frac{40}{49}$

A) 5.60 B) 1.12 C) 1.00 D) 28

Answer: B

150) $\frac{289}{322} - \frac{159}{523}$

A) 0.00 B) 0.65 C) 1.20 D) 0.59

Answer: D

151) $\frac{733}{928} + \frac{400}{893}$

A) 1.25 B) 1.24 C) 0.00 D) 0.62

Answer: B

Evaluate the expression for the given value or values.

152) $\frac{y}{z}$, for $y = 16$ and $z = 8$

A) 8 B) 2 C) –8 D) –2

Answer: B

153) $\frac{x}{9} + \frac{y}{9}$ for $x = 18$, $y = 36$

A) 54 B) 6 C) 38 D) 22

Answer: B

154) $\frac{x}{w} \div \frac{y}{z}$ for $w = 7$, $x = 3$, $y = 8$ and $z = 21$

A) $\frac{1}{9}$ B) $\frac{8}{49}$ C) $\frac{9}{8}$ D) $\frac{8}{9}$

Answer: C

155) $\frac{y}{z} \cdot \frac{w}{x}$ for $w = 8$, $x = 1$, $y = 2$ and $z = 8$

A) 32 B) 2 C) $\frac{1}{2}$ D) $\frac{1}{32}$

Answer: B

156) $\frac{x}{w} - \frac{y}{z}$ for $w = 8$, $x = 5$, $y = 4$ and $z = 40$

A) $\frac{21}{5}$ B) $\frac{29}{40}$ C) $\frac{21}{40}$ D) $\frac{21}{8}$

Answer: C

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Solve. Write the answer in simplest form.

157) A rectangular picture has a width of $\frac{6}{13}$ foot and a length of $\frac{1}{3}$ foot. What is the area of this picture?

A) $\frac{2}{13}$ square foot B) $\frac{7}{16}$ square foot C) $\frac{6}{39}$ square foot D) $\frac{3}{8}$ square foot

Answer: A

Solve. Simplify the answer.

158) The probability that an event does not occur may be found by subtracting the probability that the event does occur from 1. If the probability that Luis passes his driving test is $\frac{1}{7}$, what is the probability that he does not pass his driving test?

A) $\frac{1}{1}$ B) $\frac{6}{7}$ C) $\frac{1}{7}$ D) $\frac{7}{1}$

Answer: B

Solve the problem.

159) A tutor charges \$73 for a tutoring session that lasts for t hours. Complete the table to help find an expression that describes the cost (in dollars) per hour. (Show the arithmetic in order to see a pattern.)

Total Time (hours)	Cost per Hour (dollars per hour)
2	
3	
4	
5	
t	

A)

Total Time (hours)	Cost per Hour (dollars per hour)
2	$\frac{2}{73}$
3	$\frac{3}{73}$
4	$\frac{4}{73}$
5	$\frac{5}{73}$
t	$\frac{t}{73}$

B)

Total Time (hours)	Cost per Hour (dollars per hour)
2	$\frac{73}{2}$
3	$\frac{73}{3}$
4	$\frac{73}{4}$
5	$\frac{73}{5}$
t	$\frac{73}{t}$

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C)

Total Time (hours)	Cost per Hour (dollars per hour)
2	2 + 73
3	3 + 73
4	4 + 73
5	5 + 73
t	t + 73

D)

Total Time (hours)	Cost per Hour (dollars per hour)
2	2 · 73
3	3 · 73
4	4 · 73
5	5 · 73
t	t · 73

Answer: B

160) The maintenance crew at an amusement park has to fence in a triangular area. One side is 68 yards long, and a second side is 50 yards long. If the crew has 504 feet of fencing, how many yards of fencing will be left over for the third side?

A) 150 yd B) 50 yd C) 386 yd D) 286 yd

Answer: B

161) Suppose that you walk 10 mi. Express this distance in yards.

A) 1760 yd B) 10,000 yd C) 1000 yd D) 17,600 yd

Answer: D

162) An airplane is cruising at an altitude of 42,240 ft. What is the plane's altitude in miles?

A) 16 mi B) 7 mi C) 8 mi D) 9 mi

Answer: C

163) Runners in a 24 km race run how many miles?

A) 38.6 mi B) 25.4 mi C) 15.0 mi D) 12.0 mi

Answer: C

164) Mustaf flew his helicopter at a speed of 83 km/hr. Express this speed in miles per hour.

A) 132.8 mi/hr B) 1328 mi/hr C) 5.2 mi/hr D) 51.9 mi/hr

Answer: D

165) Sally's dog weighs 14.5 pounds . How many ounces is this?

A) 203 B) 232 C) 0.91 D) 20

Answer: B

166) Syed plans to climb a mountain which is 6316 meters high. What is the height of the mountain in feet? Round to the nearest foot.

A) 20,716 ft B) 6884 ft C) 18,948 ft D) 1926 ft

Answer: A

167) Bill is driving at a speed of 74.3 ft/sec. What is his speed in miles per hour?

A) 119.6 mi/hr B) 109.0 mi/hr C) 50.7 mi/hr D) 46.1 mi/hr

Answer: C

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168) Lu Na's car gets 29 miles to the gallon on the highway. How many kilometers per liter does she get on the highway? Round to the nearest hundredth.

A) 68.14 kilometers per liter
B) 176.96 kilometers per liter
C) 4.75 kilometers per liter
D) 12.33 kilometers per liter

Answer: D

169) Karen and Ivan traveled at 120 kilometers/hour for 4.5 hours. Their total trip will be 645 miles long. How many miles do they still need to travel? (Round your answer to the nearest whole mile, if necessary.)

A) 498 mi
B) 105 mi
C) 310 mi
D) 571 mi

Answer: C

Compute.

170) $-(-4)$

A) 1
B) $\frac{1}{4}$
C) -4
D) 4

Answer: D

171) $-(-16)$

A) -16
B) $\frac{1}{16}$
C) 1
D) 16

Answer: D

172) $-(-21)$

A) 21
B) -21
C) $-\frac{1}{21}$
D) 0

Answer: A

173) $-(-(-27))$

A) 27
B) -27
C) $\frac{1}{27}$
D) 0

Answer: B

Find the sum.

174) $-3 + (-14)$

A) -17
B) -11
C) 17
D) 11

Answer: A

175) $-15 + (-11)$

A) 4
B) -4
C) -26
D) 26

Answer: C

176) $-14 + (-27)$

A) -41
B) 13
C) 41
D) -13

Answer: A

177) $-20 + (-20)$

A) -20
B) -40
C) 40
D) 0

Answer: B

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178) $-86 + (-14)$

A) -100 B) -72 C) 72 D) 100

Answer: A

179) $-29 + (-150)$

A) 121 B) -121 C) -179 D) 179

Answer: C

180) $-271 + (-726)$

A) 455 B) -997 C) -455 D) -355

Answer: B

181) $-2.6 + (-19.3)$

A) -16.7 B) 16.7 C) 21.9 D) -21.9

Answer: D

182) $-8.7 + (-2.5)$

A) 11.2 B) -11.2 C) -6.2 D) 6.2

Answer: B

183) $-\frac{4}{7} + \left(-\frac{1}{7}\right)$

A) $\frac{5}{7}$ B) $-\frac{3}{7}$ C) $-\frac{5}{7}$ D) $\frac{3}{7}$

Answer: C

184) $-\frac{3}{10} + \left(-\frac{1}{5}\right)$

A) $-\frac{4}{5}$ B) $-\frac{4}{15}$ C) $-\frac{1}{2}$ D) $-\frac{1}{10}$

Answer: C

Use a calculator to find the sum. Round the result to two decimal places.

185) $-37.66 + (-8.19)$

A) 45.85 B) -45.85 C) -29.47 D) 29.47

Answer: B

186) $-108.78 + (-48.05)$

A) 60.73 B) 156.83 C) -60.73 D) -156.83

Answer: D

187) $-11{,}887.83 + (-99{,}818.44)$

A) $-111{,}706.27$ B) 87,930.61 C) 111,706.27 D) $-87{,}930.61$

Answer: A

188) $-\frac{747}{979} + \left(-\frac{447}{898}\right)$

A) 1.26 B) -0.64 C) -14.74 D) -1.26

Answer: D

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Compute.

189) $|8|$

A) 0 B) $-\frac{1}{8}$ C) 8 D) −8

Answer: C

190) $|-4|$

A) 4 B) 0 C) $-\frac{1}{4}$ D) −4

Answer: A

191) $|-30|$

A) $-\frac{1}{30}$ B) −30 C) 0 D) 30

Answer: D

192) $-|25|$

A) 25 B) 0 C) $\frac{1}{25}$ D) −25

Answer: D

193) $-|13|$

A) 13 B) 0 C) $-\frac{1}{13}$ D) −13

Answer: D

194) $-|-7|$

A) 0 B) 7 C) $-\frac{1}{7}$ D) −7

Answer: D

Find the sum.

195) $7 + (-12)$

A) −5 B) 5 C) −19 D) 19

Answer: A

196) $-13 + 14$

A) −27 B) 27 C) −1 D) 1

Answer: D

197) $20 + (-5)$

A) 25 B) −25 C) 15 D) −15

Answer: C

198) $-14 + 11$

A) −3 B) −25 C) 25 D) 3

Answer: A

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199) 40 + (–15)
A) –55 B) 25 C) 55 D) –25
Answer: B

200) –23 + 22
A) –1 B) 45 C) –45 D) 1
Answer: A

201) 21 + (–21)
A) 42 B) –21 C) 0 D) 21
Answer: C

202) 38 + (–66)
A) –28 B) –104 C) 104 D) 28
Answer: A

203) –30 + 18
A) 48 B) –48 C) –12 D) 12
Answer: C

204) 78 + (–160)
A) –82 B) 82 C) 238 D) –238
Answer: A

205) –66 + 157
A) 223 B) 91 C) –223 D) –91
Answer: B

206) –163 + 826
A) 663 B) 563 C) –663 D) –989
Answer: A

207) –758 + 384
A) – 374 B) –1142 C) 274 D) 374
Answer: A

208) 50,922 + (–50,922)
A) 101,844 B) –22 C) –101,844 D) 0
Answer: D

209) 12.1 + (–13.5)
A) 1.4 B) 25.6 C) –25.6 D) –1.4
Answer: D

210) 5.5 + (–9.9)
A) 4.4 B) 15.4 C) –15.4 D) –4.4
Answer: D

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211) $-23.2 + 12.8$

A) -36 B) -10.4 C) 10.4 D) 36

Answer: B

212) $\frac{7}{10} + \left(-\frac{4}{5}\right)$

A) $-\frac{1}{10}$ B) $\frac{3}{2}$ C) $-\frac{3}{2}$ D) $\frac{1}{10}$

Answer: A

213) $-\frac{4}{7} + \frac{2}{7}$

A) $\frac{2}{7}$ B) $-\frac{6}{7}$ C) $\frac{6}{7}$ D) $-\frac{2}{7}$

Answer: D

214) $\frac{7}{32} + \left(-\frac{7}{32}\right)$

A) $-\frac{7}{16}$ B) $\frac{7}{8}$ C) 0 D) $\frac{7}{16}$

Answer: C

Use a calculator to find the sum. Round the result to two decimal places.

215) $656.86 + (-57.30)$

A) 599.56 B) 599.86 C) 714.16 D) -599.56

Answer: A

216) $-12.18 + 43.54$

A) 55.72 B) 31.36 C) -55.72 D) -31.36

Answer: B

217) $-147.92 + 44.08$

A) -103.84 B) 184.00 C) -102.84 D) -192.00

Answer: A

218) $\frac{232}{305} + \left(-\frac{199}{510}\right)$

A) 1.15 B) 0.04 C) 0.37 D) -0.16

Answer: C

Solve the problem.

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219) A check register is shown in the table below. Find the final balance of the checking account.

Check Register					
Check Number	Date	Description of Transaction	Payment	Deposit	Balance
					8.27
	12/20	Paycheck		612.96	
1752	12/22	Petcom	21.05		
1753	12/22	Park & Shop	215.96		
	1/02	ATM	100.00		
	1/09	Rebate		21.97	

A)

Check Register					
Check Number	Date	Description of Transaction	Payment	Deposit	Balance
					8.27
	12/20	Paycheck		612.96	621.23
1752	12/22	Petcom	21.05		642.28
1753	12/22	Park & Shop	215.96		858.24
	1/02	ATM	100.00		958.24
	1/09	Rebate		21.97	980.21

The final balance of the checking account is 980.21 dollars.

B)

Check Register					
Check Number	Date	Description of Transaction	Payment	Deposit	Balance
					8.27
	12/20	Paycheck		612.96	621.23
1752	12/22	Petcom	21.05		600.18
1753	12/22	Park & Shop	215.96		384.22
	1/02	ATM	100.00		284.22
	1/09	Rebate		21.97	306.19

The final balance of the checking account is 306.19 dollars.

C)

Check Register					
Check Number	Date	Description of Transaction	Payment	Deposit	Balance
					8.27
	12/20	Paycheck		612.96	621.23
1752	12/22	Petcom	21.05		600.18
1753	12/22	Park & Shop	215.96		384.22
	1/02	ATM	100.00		284.22
	1/09	Rebate		21.97	262.25

The final balance of the checking account is 262.25 dollars.

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D)

Check Register					
Check Number	Date	Description of Transaction	Payment	Deposit	Balance
					8.27
	12/20	Paycheck		612.96	–604.69
1752	12/22	Petcom	21.05		–583.64
1753	12/22	Park & Shop	215.96		–367.68
	1/02	ATM	100.00		–267.68
	1/09	Rebate		21.97	–289.65

The final balance of the checking account is –289.65 dollars.

Answer: B

220) A pet store is offering a sale of $5 off the retail price of any of its pet beds or pet carriers.

(i) Complete the table below to help find an expression that describes the sale price (in dollars) if the retail price is r dollars. Show the arithmetic to help you see a pattern.
(ii) Evaluate the expression you found in part (i) for r = 89. What does your result mean in this situation?

Retail and Sale Prices	
Retail Price (dollars)	Sale Price (dollars)
60	
75	
90	
105	
r	

A) (i)

Retail and Sale Prices	
Retail Price (dollars)	Sale Price (dollars)
60	60 + (–5)
75	75 + (–5)
90	90 + (–5)
105	105 + (–5)
r	r + (–5)

(ii) 89 + (–5) = 84; This means that if the pet bed or pet carrier was originally retail priced at $89, it would be on sale for $84.

B) (i)

Retail and Sale Prices	
Retail Price (dollars)	Sale Price (dollars)
60	60 + (–5)
75	75 + (–7.5)
90	90 + (–10)
105	105 + (–12.5)
r	r + (–15)

(ii) 89 + (–15) = 74; This means that if the pet bed or pet carrier was originally retail priced at $89, it would be on sale for $74.

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C) (i)

Retail and Sale Prices	
Retail Price (dollars)	Sale Price (dollars)
60	60 + 5
75	75 + 5
90	90 + 5
105	105 + 5
r	r + 5

(ii) 89 + 5 = 94; This means that if the pet bed or pet carrier was originally retail priced at $89, it would be now cost $94.

D) (i)

Retail and Sale Prices	
Retail Price (dollars)	Sale Price (dollars)
60	60 + (−5)
75	75 + (−10)
90	90 + (−15)
105	105 + (−20)
r	r + (−25)

(ii) 89 + (−25) = 64; This means that if the pet bed or pet carrier was originally retail priced at $89, it would be on sale for $64.

Answer: A

221) On part of a scenic tour of underground caves, Dave and Neil started at an elevation of −31 feet. They then rose 13 feet. What was their elevation at this point?
A) 18 ft B) −44 ft C) −18 ft D) 44 ft

Answer: C

222) Sean has $496 in his savings account. After he withdraws $80, what will his balance be?
A) $416 B) −$576 C) −$416 D) $576

Answer: A

223) Mr Lu Yi owed $135 on his bank credit card. He charged another item costing $9 . Find the amount that Lu Yi owed the bank.
A) $147 B) $144 C) $124 D) $126

Answer: B

224) At the start of a chemistry experiment, Sarah measured the temperature of a liquid to be −14°C. At the end of the experiment, it had risen 37°C. What was the liquid's temperature at the end of the experiment?
A) −23°C B) −51°C C) 23°C D) 51°C

Answer: C

225) The temperature at 5:00 was −4°C. Four hours later, it was −11°C. What was the change in temperature?
A) 7°C B) 15°C C) −7°C D) −15°C

Answer: C

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226) A corporation's bank account has $7496 in it when the treasurer writes checks for $2473, $1763, and $1560. Then deposits of $5687 and $2222 are made. How much is in the account? Is it overdrawn?

A) $5383, no B) $9609, no C) –$5383, yes D) $11,169, no

Answer: B

Find the difference.

227) 8 – 3

A) 3 B) –5 C) 11 D) 5

Answer: D

228) –6 – 11

A) –5 B) 17 C) 5 D) –17

Answer: D

229) –9 – (–4)

A) –13 B) 5 C) 13 D) –5

Answer: D

230) 6 – (–4)

A) 10 B) 2 C) –2 D) –10

Answer: A

231) 13 – 13

A) 0 B) 1 C) 13 D) –13

Answer: A

232) 0 – 18

A) 0 B) –18 C) 18 D) –(–18)

Answer: B

233) –17 – 17

A) –34 B) 0 C) 34 D) –17

Answer: A

234) –8 – (–8)

A) –8 B) 8 C) 1 D) 0

Answer: D

235) 0 – (–15)

A) –15 B) 15 C) 30 D) 0

Answer: B

236) 5 – (–5)

A) –10 B) 0 C) 10 D) 5

Answer: C

237) –7 – 24

A) 17 B) –17 C) 31 D) –31

Answer: D

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238) –7 – (–26)
A) –33 B) –19 C) 33 D) 19
Answer: D

239) –70 – 100
A) –170 B) 30 C) 170 D) –30
Answer: A

240) –30 – (– 110)
A) –140 B) 140 C) –80 D) 80
Answer: D

241) 357 – (–972)
A) 615 B) –615 C) 1329 D) –1329
Answer: C

242) 715 – 184
A) 531 B) 431 C) –531 D) –899
Answer: A

243) – 465 – 856
A) 391 B) –1321 C) –391 D) –291
Answer: B

244) – 485 – (–755)
A) 270 B) –170 C) –270 D) –1240
Answer: A

245) –476 – (–486)
A) –962 B) 10 C) 962 D) –10
Answer: B

246) –292 – 538
A) –246 B) –146 C) –830 D) 246
Answer: C

247) –3.5 – (–21.1)
A) 24.6 B) –17.6 C) 17.6 D) –24.6
Answer: C

248) –4.5 – 13.6
A) 18.1 B) 9.1 C) –9.1 D) –18.1
Answer: D

249) 8.8 – 8.3
A) 17.1 B) 0.5 C) –0.5 D) –17.1
Answer: B

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250) $-44.58 - (-14.19)$

A) -58.77 B) 58.77 C) 30.39 D) -30.39

Answer: D

251) $(0.63) - (-0.76)$

A) -0.4788 B) 0.23 C) 0.13 D) 1.39

Answer: D

252) $0.62 - (-0.53)$

A) 0.3286 B) 1.15 C) 0.09 D) 1.25

Answer: B

253) $-\frac{1}{5} - \frac{1}{15}$

A) $-\frac{7}{25}$ B) $-\frac{1}{10}$ C) $-\frac{2}{15}$ D) $-\frac{4}{15}$

Answer: D

254) $\frac{8}{9} - \frac{1}{5}$

A) $\frac{7}{9}$ B) $\frac{7}{45}$ C) $\frac{31}{9}$ D) $\frac{31}{45}$

Answer: D

255) $\frac{2}{5} - \left(-\frac{4}{9}\right)$

A) $-\frac{2}{15}$ B) $\frac{38}{45}$ C) $-\frac{38}{45}$ D) $-\frac{2}{45}$

Answer: B

256) $-\frac{1}{2} - \frac{4}{9}$

A) $\frac{1}{18}$ B) $-\frac{17}{18}$ C) $\frac{17}{18}$ D) $-\frac{1}{9}$

Answer: B

257) $-\frac{7}{9} - \left(-\frac{1}{2}\right)$

A) $\frac{23}{18}$ B) $-\frac{23}{18}$ C) $-\frac{4}{9}$ D) $-\frac{5}{18}$

Answer: D

258) $-\frac{1}{5} - \left(-\frac{4}{15}\right)$

A) $-\frac{1}{15}$ B) $\frac{1}{25}$ C) $\frac{1}{15}$ D) $-\frac{1}{5}$

Answer: C

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259) $-\frac{1}{9}-\left(\frac{1}{18}\right)$

A) $\frac{1}{6}$ B) $\frac{1}{12}$ C) $-\frac{1}{6}$ D) $-\frac{1}{108}$

Answer: C

260) $\frac{1}{20}-\left(-\frac{5}{12}\right)$

A) $-\frac{13}{30}$ B) $\frac{2}{15}$ C) $\frac{7}{15}$ D) $-\frac{7}{15}$

Answer: C

Use a calculator to compute. Round the result to two decimal places.

261) −134.05 − 24.23

A) 158.28 B) −158.28 C) −109.82 D) 109.82

Answer: B

262) −145.92 − 44.35

A) 190.27 B) −190.27 C) 101.57 D) −101.57

Answer: B

263) −11,476.14 − 95,652.633

A) 84,176.49 B) −84,176.49 C) −107,128.77 D) −11,476.14

Answer: C

264) $-\frac{29}{37}-\frac{11}{51}$

A) −0.57 B) −1.00 C) 0.00 D) 0.19

Answer: B

265) $-\frac{73}{95}-\left(-\frac{43}{81}\right)$

A) −2.14 B) −0.17 C) −0.24 D) −1.30

Answer: C

Evaluate the expression for the given replacement values.

266) x + y, for x = −3 and y = −2

A) −1 B) −5 C) 1 D) 5

Answer: B

267) y + x, for x = −2 and y = 4

A) 2 B) 6 C) −6 D) −2

Answer: A

268) x − y for x = −30, y = 9

A) 21 B) −39 C) −21 D) 39

Answer: B

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269) $x - y$ for $x = -18$, $y = -6$

A) 24 B) 12 C) −24 D) −12

Answer: D

270) $x - y$ for $x = 2$, $y = -28$

A) 26 B) −26 C) 30 D) −30

Answer: C

271) $x - y$ for $x = -3$, $y = -22$

A) 25 B) −25 C) 19 D) −19

Answer: C

272) $x - y$ for $x = 10$, $y = 16$

A) 26 B) 6 C) −26 D) −6

Answer: D

Let x be a number. Translate the English phrase or sentence into a mathematical expression.

273) 23 less than a number

A) $23 \div x$ B) $x + 23$ C) $23 - x$ D) $x - 23$

Answer: D

274) −10 minus a number

A) $-10 \div x$ B) $x + 10$ C) $x - 10$ D) $-10 - x$

Answer: D

275) Subtract 35 from a number

A) 35 B) $x - 35$ C) $35 - x$ D) $35x$

Answer: B

276) Subtract −52 from a number.

A) $x - (-52)$ B) −52 C) $52 - x$ D) $-52x$

Answer: A

277) The difference of a number and −28

A) $-28 - x$ B) $x - (-28)$ C) $-28 + x$ D) $-28x$

Answer: B

278) Eleven less than a number

A) $x + 11$ B) $11x$ C) $11 - x$ D) $x - 11$

Answer: D

279) The number decreased by −29

A) $x - (-29)$ B) $-29 \div x$ C) $-29 - x$ D) $-29 + x$

Answer: A

280) 46 decreased by a number

A) $46 \div x$ B) $x - 46$ C) $46 + x$ D) $46 - x$

Answer: D

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281) −44 decreased by a number

A) −44 − x B) −44 + x C) −44 ÷ x D) x − (−44)

Answer: A

282) A number decreased by eight

A) x − 8 B) $\frac{8}{x}$ C) x + 8 D) 8 − x

Answer: A

Solve the problem.

283) The temperature at 5:00 was −3°C. Four hours later, it was −10°C. What was the change in temperature?

A) 7°C B) 13°C C) −7°C D) −13°C

Answer: C

284) The temperature on a March morning is −8°F at 1a.m. If the temperature drops 5° by 2 a.m., rises 8° by 3 a.m., and then drops 3° by 4a.m., find the temperature at 4 a.m.

A) 8°F B) −8°F C) −24°F D) 24°F

Answer: B

285) At the start of a chemistry experiment, Sarah measured the temperature of a liquid to be −2°C. At the end of the experiment, it had risen 40°C. What was the liquid's temperature at the end of the experiment?

A) −38°C B) 38°C C) 42°C D) −42°C

Answer: B

286) Sean has $221 in his savings account. After he withdraws $44, what will his balance be?

A) $265 B) −$177 C) $177 D) −$265

Answer: C

287) Raya has $274 in her checking account. She writes a check for $58, makes a deposit for $67, and then writes another check for $134. Find the amount left in her account.

A) −15 dollars B) −149 dollars C) 15 dollars D) 149 dollars

Answer: D

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288) The changes in retail sales (in billions of dollars) of hand–held computer games in Country X from one year to the next are given in the following table.

Changes in Retail Sales of Hand–Held Computer Games	
Years	Changes in Retail Sales (billions of dollars)
1998–1999	0.0
1999–2000	–1.3
2000–2001	–0.4
2001–2002	0.0
2002–2003	1.1
2003–2004	2.2
2004–2005	1.7

(i) If there were $8.9 billion in sales in 1998, what were the sales during 2005?
(ii) During which period(s) were the retail sales increasing?
(iii) During which period(s) were the retail sales decreasing?

A) (i) 24.5 billion;
(ii) From 2001 to 2005;
(iii) From 1999 to 2002

B) (i) 24.5 billion;
(ii) From 2002 to 2005;
(iii) From 1999 to 2001

C) (i) $12.2 billion;
(ii) From 2001 to 2005;
(iii) From 1999 to 2002

D) (i) $12.2 billion;
(ii) From 2002 to 2005;
(iii) From 1999 to 2001

Answer: D

289) Last year, enrollment at an art school was 15,277 students.
(i) Complete the table below to help find an expression that describes the current enrollment if the change in enrollment in the past year is c students. Show the arithmetic to help you see a pattern.
(ii) Evaluate the expression you find in part (i) for c = –400. What does your result mean in this situation?

Changes in Enrollments and Current Enrollments	
Change in Enrollment	Current Enrollment
90	
135	
270	
405	
405	
675	
c	

A) (i)

Changes in Enrollments and Current Enrollments	
Change in Enrollment	Current Enrollment
90	90 + 15,277
135	135 + 15,277
270	270 + 15,277
405	405 + 15,277
540	405 + 15,277
675	675 + 15,277
c	810c + 15,277

(ii) 339,277; This means that the current enrollment is 339,277 due to an increase in enrollment of 324,000 students in the past year.

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B) (i)

Changes in Enrollments and Current Enrollments	
Change in Enrollment	Current Enrollment
90	90 – 15,277
135	135 – 15,277
270	270 – 15,277
405	405 – 15,277
405	405 – 15,277
675	675 – 15,277
c	c – 15,277

(ii) –15,677; This means that the current enrollment is –15,677 due to a decrease in enrollment of 400 students in the past year.

C) (i)

Changes in Enrollments and Current Enrollments	
Change in Enrollment	Current Enrollment
90	90 + 15,277
135	135 + 15,277
270	270 + 15,277
405	405 + 15,277
405	405 + 15,277
675	675 + 15,277
c	c + 15,277

(ii) 14,877; This means that the current enrollment is 14,877 due to a decrease in enrollment of 400 students in the past year.

D) (i)

Changes in Enrollments and Current Enrollments	
Change in Enrollment	Current Enrollment
90	15,277 – 90
135	15,277 – 135
270	15,277 – 270
405	15,277 – 405
405	15,277 – 405
675	15,277 – 675
c	15,277 – c

(ii) 15,677; This means that the current enrollment is 15,677 due to an increase in enrollment of 400 students in the past year.

Answer: C

Write the percentage as a decimal number.

290) 2%

A) 2 B) 0.2 C) 0.02 D) 20.0

Answer: C

291) 16%

A) 0.16 B) 0.016 C) 1.6 D) 16.0

Answer: A

292) 70%

A) 7 B) 0.7 C) 0.59 D) 0.07

Answer: B

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293) 20%
A) 0.02 B) 0.2 C) 20.0 D) 2
Answer: B

294) 89%
A) 0.89 B) 8.9 C) 0.089 D) 89.0
Answer: A

295) 5.7%
A) 0.057 B) 0.57 C) 57.0 D) 5.7
Answer: A

296) 23.3%
A) 0.233 B) 0.0233 C) 2.33 D) 23.3
Answer: A

297) 0.2%
A) 0.2 B) 0.02 C) 0.002 D) 0.003
Answer: C

Write the decimal number as a percentage.

298) 0.1
A) 10% B) 100% C) 0.1% D) 0.01%
Answer: A

299) 0.58
A) 58% B) 580% C) 5.8% D) 0.058%
Answer: A

300) 0.002
A) 0.02% B) 2% C) 0.002% D) 0.2%
Answer: D

301) 0.762
A) 76.2% B) 0.0762% C) 0.762% D) 762%
Answer: A

302) 0.004
A) 4% B) 0.04% C) 0.004% D) 0.4%
Answer: D

Write the percent as a decimal.

303) 32% of students at a small college lived at home while attending classes.
A) 0.32 B) 32.0 C) 0.032 D) 3.2
Answer: A

Solve the problem.

304) Find 5% of 200 cars.
A) 0.1 cars B) 1 cars C) 10 cars D) 100 cars
Answer: C

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305) Find 10% of 200 boxes.
A) 2 boxes B) 0.2 boxes C) 20 boxes D) 200 boxes
Answer: C

306) Find 5% of $300.
A) $15 B) $0.15 C) $150 D) $1.50
Answer: A

307) Find 22% of $104,000.
A) $2288 B) $22,880 C) $229 D) $4727
Answer: B

308) Find 25% of 624 teachers.
A) 468 teachers B) 4 teachers C) 156 teachers D) 2496 teachers
Answer: C

309) Find 8% of 4000 computers.
A) 320 computers B) 32,000 computers C) 3200 computers D) 32 computers
Answer: A

310) Find 32% of 1674 oz.
A) 5356.8 oz B) 53.57 oz C) 53,568 oz D) 535.68 oz
Answer: D

311) Find 83% of 380 km.
A) 31,540 km B) 315.4 km C) 31.54 km D) 3154 km
Answer: B

Find the product.

312) −16(11)
A) 160 B) −187 C) −160 D) −176
Answer: D

313) −7(−6)
A) −42 B) 84 C) 52 D) 42
Answer: D

314) 6(−10)
A) −66 B) −600 C) −160 D) −60
Answer: D

315) −11(0)
A) 11 B) −11 C) −22 D) 0
Answer: D

316) −20(−20)
A) 420 B) −420 C) −400 D) 400
Answer: D

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317) 5(9)

A) 45 B) 40 C) 450 D) 35

Answer: A

318) –2.1(–17)

A) 19.1 B) –14.9 C) 35.7 D) –19.1

Answer: C

319) 28(–64)

A) 1802 B) –1782 C) –1792 D) 1892

Answer: C

320) –98(–776)

A) 76,048 B) 76,058 C) –76,058 D) –76,048

Answer: A

321) $\left(-\frac{1}{3}\right)\left(\frac{4}{5}\right)$

A) $-\frac{4}{15}$ B) $-\frac{5}{8}$ C) $\frac{4}{15}$ D) $\frac{5}{8}$

Answer: A

322) $\left(-\frac{7}{9}\right)\left(-\frac{1}{4}\right)$

A) $-\frac{8}{13}$ B) $-\frac{7}{36}$ C) $\frac{7}{36}$ D) $\frac{8}{13}$

Answer: C

323) $\frac{6}{5}\left(-\frac{2}{9}\right)$

A) $\frac{2}{15}$ B) $\frac{4}{15}$ C) $-\frac{4}{15}$ D) $-\frac{2}{15}$

Answer: C

324) $\left(-\frac{1}{8}\right)\left(-\frac{4}{9}\right)$

A) $-\frac{1}{18}$ B) $-\frac{5}{17}$ C) $\frac{4}{13}$ D) $\frac{1}{18}$

Answer: D

Find the quotient.

325) –70 ÷ 7

A) –700 B) 10 C) –10 D) $-\frac{1}{10}$

Answer: C

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326) $-12 \div (-4)$

A) -120 B) -3 C) $\frac{1}{3}$ D) 3

Answer: D

327) $54 \div (-9)$

A) $-\frac{1}{6}$ B) 6 C) -6 D) -540

Answer: C

328) $\frac{-56}{8}$

A) -560 B) $-\frac{1}{7}$ C) 7 D) -7

Answer: D

329) $\frac{-28}{-7}$

A) -280 B) $\frac{1}{4}$ C) 4 D) -4

Answer: C

330) $\frac{12}{-4}$

A) $-\frac{1}{3}$ B) 3 C) -3 D) -120

Answer: C

331) $-22 \div (-1)$

A) -22 B) $\frac{1}{22}$ C) 22 D) $-\frac{1}{22}$

Answer: C

332) $-25 \div 25$

A) 1 B) 0 C) -25 D) -1

Answer: D

333) $-60 \div 2$

A) 30 B) -40 C) -30 D) $-\frac{1}{30}$

Answer: C

334) $40 \div (-4)$

A) -10 B) 10 C) -20 D) $-\frac{1}{10}$

Answer: A

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335) $-207 \div (-9)$

A) 13 B) -23 C) $\frac{1}{23}$ D) 23

Answer: D

336) $-192 \div (64)$

A) $-\frac{1}{3}$ B) 3 C) -13 D) -3

Answer: D

337) $711 \div (-79)$

A) -9 B) -19 C) $-\frac{1}{9}$ D) 9

Answer: A

338) $\frac{-126}{-7}$

A) -18 B) 8 C) 18 D) $\frac{1}{18}$

Answer: C

339) $357 \div (-17)$

A) 22 B) -22 C) -21 D) 21

Answer: C

340) $-37.2 \div (-6)$

A) $-\frac{1}{6.2}$ B) 6.1 C) 6.2 D) -6.2

Answer: C

341) $29.4 \div (-6)$

A) 6.1 B) -4.9 C) $-\frac{1}{4.9}$ D) 4.9

Answer: B

342) $-39.51 \div 3$

A) -13.77 B) 13.77 C) -13.17 D) 13.17

Answer: C

343) $-17.5 \div (-7.0)$

A) 0.25 B) -0.25 C) -2.5 D) 2.5

Answer: D

344) $\frac{9}{24} \div (-8)$

A) $-\frac{3}{64}$ B) $-\frac{64}{3}$ C) $\frac{3}{64}$ D) -3

Answer: A

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345) $-10 \div \left(-\frac{4}{14}\right)$

A) $-\frac{1}{35}$ B) -35 C) $\frac{1}{35}$ D) 35

Answer: D

346) $\frac{2}{5} \div \frac{1}{7}$

A) $\frac{5}{14}$ B) $\frac{2}{5}$ C) $\frac{14}{5}$ D) $\frac{2}{35}$

Answer: C

347) $\frac{4}{5} \div \left(-\frac{5}{8}\right)$

A) $\frac{25}{32}$ B) $-\frac{1}{2}$ C) $-\frac{32}{25}$ D) 2

Answer: C

348) $\left(-\frac{3}{7}\right) \div \left(-\frac{8}{5}\right)$

A) $\frac{24}{35}$ B) $-\frac{56}{15}$ C) $-\frac{35}{24}$ D) $\frac{15}{56}$

Answer: D

349) $-\frac{3}{8} \div \frac{7}{5}$

A) $-\frac{56}{15}$ B) $-\frac{15}{56}$ C) $\frac{21}{40}$ D) $-\frac{40}{21}$

Answer: B

350) $\left(-\frac{5}{11}\right) \div \left(-\frac{35}{33}\right)$

A) $\frac{3}{7}$ B) $-\frac{7}{3}$ C) $\frac{7}{3}$ D) $-\frac{3}{7}$

Answer: A

351) $-223.5 \div (-15)$

A) -159 B) -149 C) 15.9 D) 14.9

Answer: D

352) $-958.92 \div 39.3$

A) 24.4 B) -2.44 C) 2.44 D) -24.4

Answer: D

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353) $-313.69 \div 0$

A) 0 B) undefined C) -313.69 D) $-\frac{1}{313.69}$

Answer: B

Use a calculator to perform the indicated operation. Round the result to two decimal places.

354) $929.929 \div (-54.65)$

A) 0.06 B) -0.06 C) -17.02 D) 17.02

Answer: C

Perform the indicated operation.

355) $\frac{1}{-2} + \left(\frac{-1}{12}\right)$

A) $-\frac{5}{8}$ B) $-\frac{1}{6}$ C) $-\frac{7}{12}$ D) $-\frac{1}{7}$

Answer: C

356) $\frac{2}{5} - \left(\frac{1}{-30}\right)$

A) $\frac{1}{10}$ B) $-\frac{1}{10}$ C) $-\frac{13}{30}$ D) $\frac{13}{30}$

Answer: D

357) $\frac{6}{7} + \left(\frac{2}{-9}\right)$

A) $\frac{40}{7}$ B) $\frac{4}{7}$ C) $\frac{40}{63}$ D) $\frac{4}{63}$

Answer: C

358) $\frac{8}{-9} - \left(\frac{-3}{7}\right)$

A) $\frac{29}{9}$ B) $\frac{29}{63}$ C) $-\frac{5}{9}$ D) $-\frac{29}{63}$

Answer: D

359) $\frac{1}{6} - \left(\frac{-3}{10}\right)$

A) $\frac{7}{15}$ B) $-\frac{1}{3}$ C) $-\frac{7}{15}$ D) $\frac{4}{15}$

Answer: A

360) $\frac{1}{-20} + \left(\frac{3}{-8}\right)$

A) $-\frac{17}{40}$ B) $\frac{1}{8}$ C) $-\frac{1}{8}$ D) $\frac{17}{40}$

Answer: A

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Use a calculator to perform the indicated operation. Round the result to two decimal places.

361) $-\frac{26}{53}\left(-\frac{383}{796}\right)$

A) 4.24 B) 0.24 C) −0.24 D) −4.24

Answer: B

Simplify.

362) $\frac{-21}{-7}$

A) $\frac{1}{3}$ B) −3 C) 3 D) −210

Answer: C

363) $\frac{22}{-33}$

A) $\frac{11}{3}$ B) $-\frac{11}{3}$ C) $\frac{2}{3}$ D) $-\frac{2}{3}$

Answer: D

364) $\frac{90}{-9}$

A) −900 B) 10 C) −10 D) $-\frac{1}{10}$

Answer: C

365) $\frac{-24}{-1}$

A) $\frac{1}{24}$ B) 24 C) $-\frac{1}{24}$ D) −24

Answer: B

366) $\frac{-14}{18}$

A) $\frac{2}{9}$ B) $-\frac{7}{9}$ C) $-\frac{2}{9}$ D) $\frac{7}{9}$

Answer: B

367) $\frac{150}{-5}$

A) −30 B) −40 C) 30 D) $-\frac{1}{30}$

Answer: A

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368) $\frac{-168}{-8}$

A) $\frac{1}{21}$ B) 21 C) 11 D) –21

Answer: B

369) $\frac{-30}{-33}$

A) $\frac{10}{11}$ B) $\frac{3}{11}$ C) $-\frac{3}{11}$ D) $-\frac{10}{11}$

Answer: A

Write the ratio as a fraction.

370) the ratio of 10 to 14

A) $\frac{10}{5}$ B) $\frac{5}{14}$ C) $\frac{5}{7}$ D) $\frac{10}{7}$

Answer: C

371) the ratio of 6 to 14

A) $\frac{3}{7}$ B) $\frac{7}{14}$ C) $\frac{3}{14}$ D) $\frac{6}{7}$

Answer: A

372) the ratio of 6 to 40

A) 2 B) $\frac{3}{40}$ C) $\frac{2}{40}$ D) $\frac{3}{20}$

Answer: D

Solve the problem.

373) A science experiment requires 540 milliliters of substance X and 18 milliliters of substance Y. Find the unit ratio of substance X to substance Y. What does your result mean in this situation?

A) $\frac{1}{30}$; For every ml of substance X used, 30 ml of substance Y must be used.

B) $\frac{30}{1}$; For every ml of substance Y used, 30 ml of substance X must be used.

C) $\frac{30.5}{1}$; For every ml of substance Y used, 30.5 ml of substance X must be used.

D) $\frac{1}{29.5}$; For every ml of substance X used, 29.5 ml of substance Y must be used.

Answer: B

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374) There were 900 billionaires in a certain country this year and 77 billionaires in this same country two years ago. Find the unit ratio of the number of billionaires this year to the number from two years ago. What does your result mean in this situation?

A) $\frac{0.1}{1}$; The number of billionaires this year was 0.1 times greater than two years ago.

B) $\frac{11.7}{1}$; The number of billionaires this year was 11.7 times greater than two years ago.

C) $\frac{11.2}{1}$; The number of billionaires this year was 11.2 times greater than two years ago.

D) $\frac{12.4}{1}$; The number of billionaires this year was 12.4 times greater than two years ago.

Answer: B

375) A person has credit card balances of –4830 dollars on a Store A account and –60 dollars on a Store B account. Find the unit ratio of the Store A account to the Store B account. If the person wishes to pay off both accounts gradually in the same amount of time, describe how the unit ratio can help guide the person in making his next payment.

A) $\frac{74.90}{1}$; For each $1 he pays to his Store B account, he should pay $74.90 to his Store A account.

B) $\frac{83.70}{1}$; For each $1 he pays to his Store B account, he should pay $83.70 to his Store A account.

C) $\frac{80.50}{1}$; For each $1 he pays to his Store B account, he should pay $80.50 to his Store A account.

D) $\frac{80.55}{1}$; For each $1 he pays to his Store B account, he should pay $80.55 to his Store A account.

Answer: C

376) The average number of viewers per day for TV Show A is 5.0 million viewers while the average number of viewers per day for TV Show B is 19.0 million viewers. Find the unit ratio of the average number of viewers per day of TV Show B to the average number of viewers per day of TV Show A. What does your result mean in this situation?

A) $\frac{3.8}{1}$; For every viewer watching TV Show A, there are about 3.8 viewers watching TV Show B.

B) $\frac{5.25}{1}$; For every viewer watching TV Show A, there are about 5.25 viewers watching TV Show B.

C) $\frac{19.5}{1}$; For every viewer watching TV Show A, there are about 19.5 viewers watching TV Show B.

D) $\frac{3.9}{1}$; For every viewer watching TV Show A, there are about 3.9 viewers watching TV Show B.

Answer: A

377) The populations and land areas are shown in the table for various regions:

Populations and Land Areas

Region	Population	Land Area (square miles)
Region K	506,720	440,054
Region L	20,679,403	349,254
Region M	5,567,910	19,887
Region N	8,595,729	9466
Region O	12,755,883	64,485

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(i) The unit ratio of population to land area is called the *population density*. Find the population density of each region listed in the table.
(ii) Which region listed in the table has the greatest population density?
(iii) Which region listed in the table has the least population density?

A) (i) Region K: $\frac{2 \text{ people}}{\text{square mile}}$; Region L: $\frac{59 \text{ people}}{\text{square mile}}$; Region M: $\frac{420 \text{ people}}{\text{square mile}}$;
Region N: $\frac{908 \text{ people}}{\text{square mile}}$; Region O: $\frac{1978 \text{ people}}{\text{square mile}}$
(ii) Region O has the greatest population density.
(iii) Region K has the least population density.

B) (i) Region K: $\frac{576 \text{ people}}{\text{square mile}}$; Region L: $\frac{1480 \text{ people}}{\text{square mile}}$; Region M: $\frac{280 \text{ people}}{\text{square mile}}$;
Region N: $\frac{454 \text{ people}}{\text{square mile}}$; Region O: $\frac{198 \text{ people}}{\text{square mile}}$
(ii) Region L has the greatest population density.
(iii) Region K has the least population density.

C) (i) Region K: $\frac{2303 \text{ people}}{\text{square mile}}$; Region L: $\frac{118 \text{ people}}{\text{square mile}}$; Region M: $\frac{756 \text{ people}}{\text{square mile}}$;
Region N: $\frac{908 \text{ people}}{\text{square mile}}$; Region O: $\frac{396 \text{ people}}{\text{square mile}}$
(ii) Region K has the greatest population density.
(iii) Region L has the least population density.

D) (i) Region K: $\frac{1 \text{ person}}{\text{square mile}}$; Region L: $\frac{59 \text{ people}}{\text{square mile}}$; Region M: $\frac{280 \text{ people}}{\text{square mile}}$;
Region N: $\frac{908 \text{ people}}{\text{square mile}}$; Region O: $\frac{198 \text{ people}}{\text{square mile}}$
(ii) Region N has the greatest population density.
(iii) Region K has the least population density.

Answer: D

378) A person has a zero balance on a credit card. The person uses the credit card to buy 2 DVDs at a cost of $13.99 per DVD. What is the new balance?
A) 27.98 dollars B) –15.99 dollars C) –13.99 dollars D) –27.98 dollars
Answer: D

Perform the indicated operations.

379) $36 + 7 - 3$
A) 76 B) 10 C) 166 D) 40
Answer: D

380) $9 \cdot 8 - 4$
A) 288 B) 68 C) 36 D) 76
Answer: B

381) $26 \cdot 6 \div 4$
A) 39.00 B) 624 C) 36 D) 152
Answer: A

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382) $-8 \cdot 5 + 13$

A) −144 B) −53 C) 64 D) −27

Answer: D

383) $240 \div 8 - 4$

A) 228 B) 236 C) 26 D) 60

Answer: C

384) $14 + 22 \cdot 30$

A) 66 B) 338 C) 674 D) 1080

Answer: C

385) $-12 + 135 \div (-9)$

A) 27 B) −14 C) −27 D) 14

Answer: C

386) $\frac{1+3}{5+5}$

A) $-\frac{1}{5}$ B) $\frac{2}{0}$ C) $\frac{4}{0}$ D) $\frac{2}{5}$

Answer: D

387) $\frac{6-4}{4-6}$

A) 2 B) $\frac{3}{2}$ C) $-\frac{3}{2}$ D) −1

Answer: D

388) $4 \cdot 10 + 5 \cdot 11$

A) 495 B) 660 C) 95 D) 260

Answer: C

389) $24 + 13 \cdot 2 - 17$

A) 33 B) 57 C) 22 D) −555

Answer: A

390) $-3(6) - (-18) \cdot 8$

A) −162 B) 126 C) 13 D) −126

Answer: B

391) $20 + 24 \cdot 25 - (-6)$

A) 1106 B) 614 C) 75 D) 626

Answer: D

392) $15 + (-13)(-11) + (-25)$

A) 283 B) −392 C) 133 D) 14

Answer: C

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393) $69 - 11 \cdot 5 + 90 \div (-18)$

A) 9 B) −8 C) 285 D) −306

Answer: A

394) $67 - 8 \cdot 7 + 136 \div 8$

A) 1055 B) 28 C) 25 D) 430

Answer: B

395) $\frac{5(6) + 4}{1 - 6(7)}$

A) $-\frac{34}{35}$ B) $-\frac{34}{41}$ C) $\frac{34}{41}$ D) $-\frac{50}{41}$

Answer: B

396) $48 \div 3(6 - 2)$

A) 1728 B) 28 C) 64 D) 36

Answer: C

397) $112 \div (8 \div 2)$

A) 108 B) 28 C) 14 D) 7

Answer: B

398) $7 \cdot 4 + 5(9 + 2) + 2$

A) 85 B) 695 C) 77 D) 93

Answer: A

399) $600 \div 15 - (5 + 5)$

A) 40 B) 30 C) 35 D) 120

Answer: B

400) $18 \div 3 \cdot (15 - 4)$

A) 94 B) 66 C) 86 D) 114

Answer: B

401) $-10 + (5 \cdot 3 + 20) \div 5$

A) −1 B) 9 C) 3 D) −3

Answer: D

402) $6 \cdot 7 - (13 - 7) \div 3 - (7 - 4)$

A) 9 B) 37 C) 29 D) 5

Answer: B

403) $9^2 - 5 \cdot 9$

A) 324 B) 144 C) 36 D) 684

Answer: C

404) $(3 + 2)^2$

A) 7 B) 11 C) 25 D) 13

Answer: C

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405) $12^2 + 3^3$

A) 33 B) 153 C) 51 D) 171

Answer: D

406) $4^4 - 5^3$

A) 13 B) 131 C) 381 D) 1

Answer: B

407) $5^3 - (-2)^4$

A) 141 B) 23 C) −1 D) 109

Answer: D

408) $2^3 - (-3)^3$

A) 35 B) −19 C) 36 D) 15

Answer: A

409) $(-5)^2 - (-3)^3$

A) −2 B) −52 C) 2 D) 52

Answer: D

410) $11 + 6^2 \cdot 30 - (-14)$

A) 177 B) 1105 C) 61 D) 1424

Answer: B

411) $7^2 - 2(3) + 45 \div 5$

A) 84 B) 10 C) 52 D) $\frac{88}{5}$

Answer: C

412) $6 + 7^2 - (-4) \cdot 11$

A) 561 B) 264 C) 11 D) 99

Answer: D

413) $(14 - 13)^3 + (3 + 2)^3$

A) 126 B) 582 C) 36 D) 216

Answer: A

414) $5^2 - 2^3 + 2^2 - 5^3$

A) 104 B) 96 C) −96 D) −104

Answer: D

415) $3 \cdot (3 + 4)^2 - 3 \cdot (6 - 4)^2$

A) 157 B) 135 C) 576 D) 405

Answer: B

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416) $10^2 + 6 \cdot 10 - (7 + 6 \cdot 6)$

A) 189 B) 1017 C) 82 D) 117

Answer: D

417) $\frac{83 + 7}{3^2 - 4}$

A) 45 B) 16 C) 27 D) 18

Answer: D

418) $\frac{54 \cdot (16 - 13) - 12}{3^2 - 3}$

A) 25 B) 27 C) 50 D) 28

Answer: A

419) $(-18) \div (-6) \cdot \left(-\frac{1}{9}\right)$

A) $-\frac{1}{3}$ B) –27 C) $\frac{1}{3}$ D) – 3

Answer: A

420) $\frac{1}{5} + \frac{1}{8} \cdot \frac{1}{9}$

A) $\frac{77}{360}$ B) $\frac{49}{40}$ C) $\frac{13}{360}$ D) $\frac{1}{180}$

Answer: A

421) $-\frac{1}{6} + \frac{1}{2} \div \frac{1}{3}$

A) $\frac{2}{3}$ B) $-\frac{5}{3}$ C) $\frac{4}{3}$ D) $\frac{35}{12}$

Answer: C

422) $-\frac{1}{4} + \frac{3}{8} \div \frac{1}{2}$

A) $\frac{11}{8}$ B) – 1 C) $\frac{1}{2}$ D) $\frac{1}{4}$

Answer: C

423) $\frac{6}{5} \cdot \frac{2}{7} + \frac{5}{6} \cdot \frac{2}{5}$

A) $\frac{71}{105}$ B) $\frac{13}{21}$ C) $\frac{71}{80}$ D) $\frac{71}{55}$

Answer: A

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424) $\frac{1}{5} + \frac{1}{5} \div \left(-\frac{2}{5}\right) \cdot \frac{1}{3}$

A) -3 B) $-\frac{1}{3}$ C) $\frac{1}{30}$ D) $-\frac{13}{10}$

Answer: C

425) $\frac{4}{5} \div \frac{1}{3} - 6 \cdot \left(\frac{1}{2}\right)^2$

A) $\frac{3}{10}$ B) $-\frac{9}{10}$ C) $-\frac{33}{5}$ D) $\frac{9}{10}$

Answer: D

426) $63 - 29 \cdot 2 + 72 \cdot \left(-\frac{1}{9}\right)$

A) -3 B) -280 C) -12 D) 60

Answer: A

Use a calculator to perform the indicated operation.

427) $12.91 + 54.1(28.2) - 3.16 \div 1.72$ (round to two decimal places)

A) 892.66 B) -1510.87 C) 1887.84 D) 1536.69

Answer: D

428) $\frac{(37.87)(-9.53) + 44.5}{70.48 - 28.19}$ (round to two decimal places)

A) -32.68 B) -4.11 C) 31.32 D) -7.48

Answer: D

429) $16.4 \div 0.4(0.3) + (1.9)^2$

A) 20.71 B) 13.11 C) 17.41 D) 15.91

Answer: D

Evaluate the expression for the given value or values.

430) $2x + 9$ for $x = 8$

A) 32 B) 7 C) 11 D) 25

Answer: D

431) $-2x^2$ for $x = 4$

A) -32 B) -64 C) 64 D) 32

Answer: A

432) $(-5x)^2$ for $x = 4$

A) 80 B) -80 C) -400 D) 400

Answer: D

433) $x^2 - 36$ for $x = -1$

A) -35 B) 35 C) -6 D) -36

Answer: A

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434) $9x^2 + 7x$ for $x = 4$

A) 172 B) 64 C) 116 D) 100

Answer: A

435) $4x^2 + 7x - 5$ for $x = -4$

A) 27 B) −49 C) 21 D) 31

Answer: D

436) $2x^2 - 3x - 2$ for $x = -1$

A) 3 B) −3 C) −1 D) −7

Answer: A

437) $\frac{a + 9}{a + 7}$ for $a = 2$

A) $\frac{7}{5}$ B) $\frac{11}{9}$ C) $\frac{5}{7}$ D) $\frac{9}{11}$

Answer: B

438) $\frac{a + 9}{2a - 9}$ for $a = 2$

A) $-\frac{9}{7}$ B) $-\frac{11}{5}$ C) $-\frac{5}{11}$ D) $-\frac{11}{7}$

Answer: B

439) $\frac{a^2}{1 - a^2}$ for $a = -4$

A) $-\frac{15}{16}$ B) $-\frac{16}{15}$ C) $\frac{16}{15}$ D) $\frac{16}{17}$

Answer: B

440) $5x + 4y$ for $x = 9, y = 2$

A) 49 B) 53 C) 9 D) 13

Answer: B

441) $9x - 3y$ for $x = 6, y = 2$

A) 52 B) 51 C) 60 D) 48

Answer: D

442) $\frac{3x}{y}$ for $x = 20, y = 5$

A) 15 B) 12 C) 45 D) 48

Answer: B

443) $\frac{x + y}{5}$ for $x = 15, y = 20$

A) 19 B) 23 C) 35 D) 7

Answer: D

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444) $x^3 - 3y$ for $x = 8, y = 2$

A) 506 B) 518 C) 30 D) 18

Answer: A

445) $6x^2 + 8y$ for $x = 9, y = 10$

A) 566 B) 672 C) 5340 D) 2996

Answer: A

446) $a^4 - (-b)^2$ for $a = 3, b = 4$

A) 97 B) 65 C) 20 D) 80

Answer: B

447) $x - y + z$ for $x = 21, y = 6, z = 1$

A) 16 B) 17 C) 14 D) 28

Answer: A

448) $x - 4yz$ for $x = 96, y = 2, z = 3$

A) 72 B) 264 C) 87 D) 552

Answer: A

449) $a \cdot b \div c$ for $a = 20, b = 5, c = 2$

A) 50 B) 200 C) 98 D) 27

Answer: A

450) $a^2 - b \cdot c$ for $a = 8, b = 3, c = 4$

A) 52 B) 244 C) 160 D) 100

Answer: A

451) $\frac{a + b}{c + d}$ for $a = 9, b = 2, c = 8, d = 5$

A) $\frac{11}{3}$ B) $\frac{7}{3}$ C) $\frac{11}{13}$ D) $\frac{7}{13}$

Answer: C

452) $\frac{a + b}{c^2 - d}$ for $a = 123, b = 7, c = 3, d = 4$

A) 65 B) 26 C) 39 D) 24

Answer: B

Let x be a number. Translate the English phrase or sentence into a mathematical expression.

453) –3 decreased by 8 times a number

A) $8 - 3x$ B) $-3 - 8x$ C) $8x - 3$ D) $-3x - 8$

Answer: B

454) 4 less than –3 times a number

A) $4 - 3x$ B) $-3x - 4$ C) $4x - 3$ D) $-3 - 4x$

Answer: B

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455) 9 more than 7 times a number

A) 16x B) 9x + 7 C) 7(9 + x) D) 7x + 9

Answer: D

Perform the exponentiation.

456) 1^8

A) 1 B) 1.125 C) $\frac{1}{8}$ D) 8

Answer: A

457) 10^1

A) 1 B) 10 C) 1.1 D) $\frac{1}{10}$

Answer: B

458) $(-1)^{15}$

A) −15 B) 15 C) 1 D) −1

Answer: D

459) 5^2

A) 26 B) 25 C) 11 D) 10

Answer: B

460) $(-6)^2$

A) 36 B) −12 C) 12 D) −36

Answer: A

461) $(-5)^3$

A) −125 B) 15 C) −15 D) 125

Answer: A

462) -5^2

A) −10 B) 10 C) −25 D) 25

Answer: C

463) 9^3

A) 19,683 B) 27 C) 729 D) 512

Answer: C

464) 7^4

A) 16,384 B) 2401 C) 343 D) 28

Answer: B

465) $(-3)^4$

A) −81 B) 9 C) −9 D) 81

Answer: D

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466) 4^5

A) 20 B) 4096 C) 625 D) 1024

Answer: D

467) $\left(\frac{3}{4}\right)^2$

A) $\frac{16}{9}$ B) $\frac{9}{4}$ C) 2.75 D) $\frac{9}{16}$

Answer: D

468) $\left(\frac{1}{9}\right)^2$

A) $\frac{2}{9}$ B) $\frac{1}{11}$ C) $\frac{1}{18}$ D) $\frac{1}{81}$

Answer: D

469) $\left(-\frac{7}{3}\right)^3$

A) $-\frac{343}{27}$ B) $\frac{49}{9}$ C) $\frac{343}{27}$ D) $-\frac{343}{3}$

Answer: A

470) $\left(-\frac{7}{5}\right)^2$

A) $\frac{49}{25}$ B) $-\frac{49}{5}$ C) $-\frac{49}{25}$ D) $\frac{49}{5}$

Answer: A

Find the square root.

471) $\sqrt{9}$

A) $\frac{1}{9}$ B) 81 C) 3 D) Not a real number

Answer: C

472) $\sqrt{121}$

A) 22 B) 60 C) 12 D) 11

Answer: D

473) $-\sqrt{169}$

A) –13 B) –84 C) 13 D) Not a real number

Answer: A

474) $-\sqrt{81}$

A) 1 B) 9 C) –9 D) Not a real number

Answer: C

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475) $\sqrt{-16}$

A) 256 B) 4 C) Not a real number D) 16

Answer: C

476) $-\sqrt{-64}$

A) 8 B) 64 C) Not a real number D) 4096

Answer: C

State whether the square root is rational or irrational. If the square root is rational, find the (exact) value. If the square root is irrational, estimate its value by rounding to the second decimal place.

477) $\sqrt{25}$

A) Rational; 5 B) Irrational; 5.10

Answer: A

478) $\sqrt{20}$

A) Rational; 10 B) Irrational; 4.47

Answer: B

479) $\sqrt{65}$

A) Rational; 18 B) Irrational; 8.06

Answer: B

480) $\sqrt{12}$

A) Rational; 5 B) Irrational; 3.46

Answer: B

Solve the problem.

481) In Country X, teacher pay in 1980 was \$21.6 thousand and has increased by approximately \$3 thousand per year since then.

(i) Complete the table below to help find an expression that stands for the teacher pay (in thousands of dollars) at t years since 1980. Show the arithmetic to help you see a pattern.

(ii) Evaluate the expression that you found in part (i) for t = 27. What does your result mean in this situation?

Numbers of Years and Teacher Pay	
Years Since 1980	Teacher Pay (thousands of dollars)
0	
1	
2	
3	
4	
t	

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A) (i)

Numbers of Years and Teacher Pay	
Years Since 1980	Teacher Pay (thousands of dollars)
0	3 + 0 + 21.6
1	3 + 1 + 21.6
2	3 + 2 + 21.6
3	3 + 3 + 21.6
4	3 + 4 + 21.6
t	3 + t + 21.6

(ii) 51.6; Teacher pay will be about $51.6 thousand in 2007.

B) (i)

Numbers of Years and Teacher Pay	
Years Since 1980	Teacher Pay (thousands of dollars)
0	$-3 \cdot 0 + 21.6$
1	$-3 \cdot 1 + 21.6$
2	$-3 \cdot 2 + 21.6$
3	$-3 \cdot 3 + 21.6$
4	$-3 \cdot 4 + 21.6$
t	$-3t + 21.6$

(ii) –59.4; Teacher pay will be about –$59.4 thousand in 2007.

C) (i)

Numbers of Years and Teacher Pay	
Years Since 1980	Teacher Pay (thousands of dollars)
0	3 – 0 + 21.6
1	3 – 1 + 21.6
2	3 – 2 + 21.6
3	3 – 3 + 21.6
4	3 – 4 + 21.6
t	3 – t + 21.6

(ii) –2.4; Teacher pay will be about –$2.4 thousand in 2007.

D) (i)

Numbers of Years and Teacher Pay	
Years Since 1980	Teacher Pay (thousands of dollars)
0	$3 \cdot 0 + 21.6$
1	$3 \cdot 1 + 21.6$
2	$3 \cdot 2 + 21.6$
3	$3 \cdot 3 + 21.6$
4	$3 \cdot 4 + 21.6$
t	$3t + 21.6$

(ii) 102.6; Teacher pay will be about $102.6 thousand in 2007.

Answer: D

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482) The population of City A was about 628 thousand in 1992 and has decreased by about 5 thousand per year since then.
(i) Complete the table below to help find an expression that stands for the population of City A (in thousands) at t years since 1992. Show the arithmetic to help you see a pattern.
(ii) Evaluate the expression that you found in part (i) for t = 25. What does your result mean in this situation?

Population of City A	
Years Since 1992	Population (thousands)
0	
1	
2	
3	
4	
t	

A) (i)

Population of City A	
Years Since 1992	Population (thousands)
0	5 – 0 + 628
1	5 – 1 + 628
2	5 – 2 + 628
3	5 – 2 + 628
4	5 – 2 + 628
t	5 – t + 628

(ii) 598; The population of City A will be about 598 thousand in 2017.

B) (i)

Population of City A	
Years Since 1992	Population (thousands)
0	–5 + 0 + 628
1	–5 + 1 + 628
2	–5 + 2 + 628
3	–5 + 2 + 628
4	–5 + 2 + 628
t	–5 + t + 628

(ii) 648; The population of City A will be about 648 thousand in 2017.

C) (i)

Population of City A	
Years Since 1992	Population (thousands)
0	$5 \cdot 0 + 628$
1	$5 \cdot 1 + 628$
2	$5 \cdot 2 + 628$
3	$5 \cdot 2 + 628$
4	$5 \cdot 2 + 628$
t	5t + 628

(ii) 753; The population of City A will be about 753 thousand in 2017.

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D) (i)

Population of City A	
Years Since 1992	Population (thousands)
0	$-5 \cdot 0 + 628$
1	$-5 \cdot 1 + 628$
2	$-5 \cdot 2 + 628$
3	$-5 \cdot 2 + 628$
4	$-5 \cdot 2 + 628$
t	$-5t + 628$

(ii) 503; The population of City A will be about 503 thousand in 2017.

Answer: D

483) If a cube has sides of length s yards, then the volume of the cube is s^3 cubic yards. Find the volume of a cubic box with sides of length 13 yards.

A) 39 cubic yards B) 338 cubic yards C) 169 cubic yards D) 2197 cubic yards

Answer: D

484) If the radius of a sphere is r feet, then the volume of the sphere is $\frac{4}{3}\pi r^3$ cubic feet. Find the volume of a sphere with radius of 6 feet. Round your answer to two decimal places.

A) 91.67 cubic feet B) 904.78 cubic feet C) 452.39 cubic feet D) 2714.34 cubic feet

Answer: B

485) The normal gasoline mileage of a car is 36 mpg. On a smooth road, its mileage is 12% higher. What is its mileage on a smooth road? Round your answer to the nearest tenth.

A) 50 mpg B) 36 mpg C) 4.3 mpg D) 40.3 mpg

Answer: D

486) The regular price of a bathing suit is $36. The price is decreased 40% for a sale in July. What is the sale price of the suit?

A) $20.60 B) $14.40 C) $21.60 D) $22.60

Answer: C

487) A computer printer costs $630. The price is increased by $3\frac{1}{2}$% for sales tax. What is the total price of the printer with tax?

A) $652.05 B) $658.35 C) $645.75 D) $850.50

Answer: A

488) Brand X copier has improved its copier so that it produces 24% more copies than its old model. If the old model ran 554 copies per hour, how many copies would the new model run? Round your answer to the nearest whole number.

A) 687 copies per hour B) 315 copies per hour C) 569 copies per hour D) 672 copies per hour

Answer: A

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Write the number in standard decimal form.

489) 2.55×10^4

A) 102 B) 25,500 C) 255,000 D) 2550

Answer: B

490) 9.57×10^{-4}

A) 0.000957 B) 0.0000957 C) –957,000 D) 0.00957

Answer: A

491) 5.837×10^{-5}

A) 0.00005837 B) 0.000005837 C) –583,700 D) 0.0005837

Answer: A

492) 3×10^3

A) 3000 B) 30,000 C) 0.003 D) 0.0003

Answer: A

Write the number in scientific notation.

493) 39,126

A) 3.9126×10^5 B) 3.9126×10^4 C) 3.9126×10^{-4} D) 3.9126×10^1

Answer: B

494) 6,300,000

A) 6.3×10^6 B) 6.3×10^{-5} C) 6.3×10^5 D) 6.3×10^{-6}

Answer: A

495) 0.000875

A) 8.75×10^{-5} B) 8.75×10^4 C) 8.75×10^{-4} D) 8.75×10^{-3}

Answer: C

496) 0.00007866

A) 7.866×10^4 B) 7.866×10^{-4} C) 7.866×10^{-5} D) 7.866×10^5

Answer: C

Solve the problem.

497) A computer compiles a program in 0.000666 seconds. Write this number in scientific notation.

A) 6.66×10^3 B) 6.66×10^{-5} C) 6.66×10^{-4} D) 6.66×10^{-6}

Answer: C

498) The diameter of an atom is about 0.0000001 millimeters (Source: *Powers of Ten,* Philip and Phylis Morrison). Write this number in scientific notation.

A) 1×10^7 mm B) 1×10^{-6} mm C) 1×10^6 mm D) 1×10^{-7} mm

Answer: D

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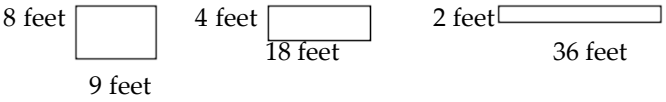
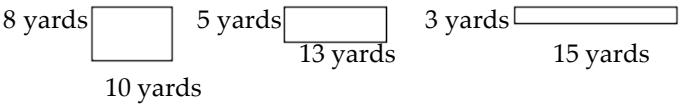
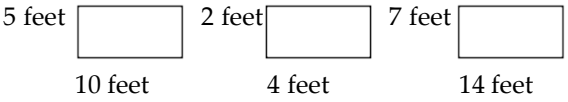
1) B
2) B
3) D
4) D
5) B
6) w; 119, 202; 0, –40 (answers may vary)
7) s; 35, 52; –74, –14 (answers may vary)
8) a. The rectangles are not drawn to scale. Answers may vary.



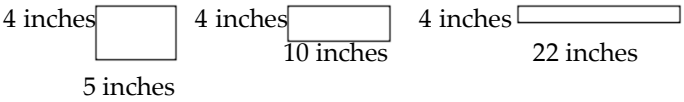
b. W, L
c. A
9) a. The rectangles are not drawn to scale. Answers may vary.



b. W, L
c. P
10) a. The rectangles are not drawn to scale. Answers may vary.



b. W, L, P
c. None
11) a. The rectangles are not drawn to scale. Answers may vary.



b. L, A
c. W
12) D
13) C
14) D
15) C
16) D
17) B
18) B
19) C
20) A
21) A
22) A

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23) B
24) C
25) D
26) B
27) A
28) B
29) C
30) B
31) A
32) B
33) C
34) A
35) A
36) A
37) B
38) A
39) C
40) D
41) C
42) A
43) C
44) D
45) D
46) D
47) B
48) C
49) C
50) B
51) B
52) B
53) B
54) D
55) B
56) C
57) B
58) A
59) D
60) C
61) B
62) A
63) A
64) B
65) A
66) D
67) C
68) A
69) C
70) D
71) A
72) D

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73) A
74) D
75) B
76) D
77) C
78) D
79) C
80) B
81) D
82) C
83) C
84) A
85) C
86) C
87) D
88) D
89) B
90) B
91) A
92) B
93) C
94) B
95) D
96) A
97) C
98) C
99) D
100) C
101) B
102) D
103) B
104) C
105) D
106) C
107) D
108) D
109) D
110) D
111) A
112) A
113) C
114) B
115) A
116) D
117) B
118) A
119) B
120) B
121) A
122) B

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123) A
124) C
125) B
126) C
127) A
128) A
129) B
130) D
131) D
132) A
133) B
134) D
135) B
136) D
137) D
138) D
139) B
140) C
141) D
142) C
143) D
144) A
145) C
146) B
147) A
148) A
149) B
150) D
151) B
152) B
153) B
154) C
155) B
156) C
157) A
158) B
159) B
160) B
161) D
162) C
163) C
164) D
165) B
166) A
167) C
168) D
169) C
170) D
171) D
172) A

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173) B
174) A
175) C
176) A
177) B
178) A
179) C
180) B
181) D
182) B
183) C
184) C
185) B
186) D
187) A
188) D
189) C
190) A
191) D
192) D
193) D
194) D
195) A
196) D
197) C
198) A
199) B
200) A
201) C
202) A
203) C
204) A
205) B
206) A
207) A
208) D
209) D
210) D
211) B
212) A
213) D
214) C
215) A
216) B
217) A
218) C
219) B
220) A
221) C
222) A

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223) B
224) C
225) C
226) B
227) D
228) D
229) D
230) A
231) A
232) B
233) A
234) D
235) B
236) C
237) D
238) D
239) A
240) D
241) C
242) A
243) B
244) A
245) B
246) C
247) C
248) D
249) B
250) D
251) D
252) B
253) D
254) D
255) B
256) B
257) D
258) C
259) C
260) C
261) B
262) B
263) C
264) B
265) C
266) B
267) A
268) B
269) D
270) C
271) C
272) D

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273) D
274) D
275) B
276) A
277) B
278) D
279) A
280) D
281) A
282) A
283) C
284) B
285) B
286) C
287) D
288) D
289) C
290) C
291) A
292) B
293) B
294) A
295) A
296) A
297) C
298) A
299) A
300) D
301) A
302) D
303) A
304) C
305) C
306) A
307) B
308) C
309) A
310) D
311) B
312) D
313) D
314) D
315) D
316) D
317) A
318) C
319) C
320) A
321) A
322) C

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323) C
324) D
325) C
326) D
327) C
328) D
329) C
330) C
331) C
332) D
333) C
334) A
335) D
336) D
337) A
338) C
339) C
340) C
341) B
342) C
343) D
344) A
345) D
346) C
347) C
348) D
349) B
350) A
351) D
352) D
353) B
354) C
355) C
356) D
357) C
358) D
359) A
360) A
361) B
362) C
363) D
364) C
365) B
366) B
367) A
368) B
369) A
370) C
371) A
372) D

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373) B
374) B
375) C
376) A
377) D
378) D
379) D
380) B
381) A
382) D
383) C
384) C
385) C
386) D
387) D
388) C
389) A
390) B
391) D
392) C
393) A
394) B
395) B
396) C
397) B
398) A
399) B
400) B
401) D
402) B
403) C
404) C
405) D
406) B
407) D
408) A
409) D
410) B
411) C
412) D
413) A
414) D
415) B
416) D
417) D
418) A
419) A
420) A
421) C
422) C

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423) A
424) C
425) D
426) A
427) D
428) D
429) D
430) D
431) A
432) D
433) A
434) A
435) D
436) A
437) B
438) B
439) B
440) B
441) D
442) B
443) D
444) A
445) A
446) B
447) A
448) A
449) A
450) A
451) C
452) B
453) B
454) B
455) D
456) A
457) B
458) D
459) B
460) A
461) A
462) C
463) C
464) B
465) D
466) D
467) D
468) D
469) A
470) A
471) C
472) D

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473) A
474) C
475) C
476) C
477) A
478) B
479) B
480) B
481) D
482) D
483) D
484) B
485) D
486) C
487) A
488) A
489) B
490) A
491) A
492) A
493) B
494) A
495) C
496) C
497) C
498) D

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