Test Bank for Introductory and Intermediate Algebra for College Students 6th Blitzer

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

Evaluate the algebraic expression for the given value(s).

1) $x + 6$, given $x = 3$

A) 10 B) 3 C) 18 D) 9

Answer: D

2) $x - 2$, given $x = 8$

A) 7 B) 6 C) 5 D) 2

Answer: B

3) $8x$, given $x = 4$

A) 8 B) 32 C) 12 D) 4

Answer: B

4) $\frac{24}{x}$, given $x = 4$

A) 6 B) 24 C) 7 D) 20

Answer: A

5) $7 + 7x$, given $x = 9$

A) 56 B) 126 C) 14 D) 70

Answer: D

6) $5(x + 2)$, given 3

A) 17 B) 25 C) 5 D) 30

Answer: B

7) $\frac{4x + 28}{4x}$, given 7

A) 28 B) 0 C) 2 D) 1

Answer: C

8) $4x + y$, given $x = 6, y = 2$

A) 22 B) 26 C) 12 D) 32

Answer: B

9) $6(x + y)$, given $x = 6, y = 5$

A) 6 B) 41 C) 66 D) 180

Answer: C

10) $6x - 5y$, given $x = 5, y = 4$

A) 8 B) 50 C) 10 D) 26

Answer: C

11) $\frac{24}{x} - \frac{35}{y}$, given $x = 3, y = 7$

A) 13 B) 2 C) 3 D) 40

Answer: C

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12) $\frac{2y - x + 20}{2x - y}$, given x = 5, y = 3

A) 3 B) 1 C) $\frac{5}{3}$ D) 21

Answer: A

13) $\frac{8x - 2y}{x + 10}$, given x = 4, y = 2

A) 2 B) 3 C) 5 D) 4

Answer: A

Write the English phrase as an algebraic expression. Let the variable x represent the number.

14) six more than a number

A) x + 6 B) x + 60 C) 6x D) x - 6

Answer: A

15) seven less than a number

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

Answer: B

16) The sum of a number and 86

A) x - 86 B) x + 86 C) 86 D) 86x

Answer: B

17) three subtracted from a number

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

Answer: A

18) five decreased by a number

A) x + 5 B) 5 - x C) x - 5 D) $\frac{x}{5}$

Answer: B

19) Six times a number, decreased by fourteen

A) 6x + 14 B) 6x - 84 C) 14 - 6x D) 6x - 14

Answer: D

20) two less than the product of 19 and a number

A) 19x - 2 B) 2x - 19 C) 2 - 19x D) 19x + 2

Answer: A

21) the sum of 45 divided by a number and that number divided by 45

A) $\frac{45}{x} + \frac{x}{45}$ B) $\frac{45 + x}{x + 45}$ C) $\frac{45}{x} - \frac{x}{45}$ D) $\frac{45 + x}{45}$

Answer: A

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22) three more than the quotient of a number and 15

A) $\frac{x}{15} + 3$ B) $\frac{15}{x} + 3$ C) 15x - 3 D) 15x + 3

Answer: A

Determine if the given value is a solution to the equation.

23) x + 1 = 16; 15

A) solution B) not a solution

Answer: A

24) y - 5 = 5; 10

A) solution B) not a solution

Answer: A

25) 60 - y = 20; 50

A) solution B) not a solution

Answer: B

26) 6z = 48; 8

A) solution B) not a solution

Answer: A

27) $\frac{r}{8} = 4$; 36

A) solution B) not a solution

Answer: B

28) 8m + 9 = 35; 3

A) not a solution B) solution

Answer: A

29) 6a - 7 = 3a + 5; 4

A) solution B) not a solution

Answer: A

30) 8(p - 1) = 4p; 2

A) solution B) not a solution

Answer: A

31) 3(w + 2) = 4(w - 1); 9

A) not a solution B) solution

Answer: A

Write the sentence as an equation. Let the variable x represent the number.

32) Three times a number is 12.

A) x + 3 = 12 B) $\frac{3}{x} = 12$ C) x - 3 = 12 D) 3x = 12

Answer: D

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33) The quotient of 14 and a number is $\frac{1}{4}$.

A) $\frac{x}{14} = \frac{1}{4}$ B) $x + 14 = \frac{1}{4}$ C) $14x = \frac{1}{4}$ D) $\frac{14}{x} = \frac{1}{4}$

Answer: D

34) The difference between 70 and a number is 10.

A) $70 + x = 10$ B) $x - 70 = 10$ C) $70 - x = 10$ D) $\frac{70}{x} = 10$

Answer: C

35) The sum of twice a number and 8 is 12.

A) $x + 16 = 12$ B) $2x - 8 = 12$ C) $16x = 12$ D) $2x + 8 = 12$

Answer: D

36) Seven less than 3 times a number gives 2.

A) $x - 21 = 2$ B) $3x - 7 = 2$ C) $7 - 3x = 2$ D) $\frac{3x}{7} = 2$

Answer: B

37) The product of 4 and a number, increased by 5, is 25.

A) $20x = 25$ B) $4(x + 5) = 25$ C) $4x + 5 = 25$ D) $4x - 5 = 25$

Answer: C

38) The product of 3 and a number increased by 4 is 21.

A) $12x = 21$ B) $3x + 4 = 21$ C) $3x - 4 = 21$ D) $3(x + 4) = 21$

Answer: D

39) Five times a number is equal to 24 decreased by the number.

A) $5x = 24 + x$ B) $5x = x - 24$ C) $5x = 24 - x$ D) $5 + x = 24 - x$

Answer: C

Solve.

40) Find the perimeter of a rectangle if the length, L, is 7 meters and the width, W, is 2 meters. Use the formula $P = 2L + 2W$.

A) 28 m B) 18 m C) 16 m D) 9 m

Answer: B

41) The formula $S = P - 0.2P$ gives the sale price, S, of a shirt that was marked down 20% from the original price, P. Find the sale price of a shirt that originally cost $50.

A) $60.00 B) $52.00 C) $49.80 D) $40.00

Answer: D

42) The formula $S = 0.51h - 23.5$ approximates the shoe size S of a woman who is h inches tall. Approximate, to the nearest whole size, the shoe size of a woman who is 69 inches tall.

A) 59 B) 26 C) 12 D) 14

Answer: C

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43) The formula P = C + 0.6C gives the price P of jewelry after a 60% mark-up on the original cost C paid by the jeweler. If the jeweler pays $172 for a piece of jewelry, what is the price after mark-up?

A) $182.32 B) $275.20 C) $68.80 D) $1,892.00

Answer: B

Convert the mixed number to an improper fraction.

44) $2\frac{7}{8}$

A) $\frac{23}{7}$ B) $\frac{16}{7}$ C) $\frac{16}{8}$ D) $\frac{23}{8}$

Answer: D

45) $2\frac{3}{7}$

A) $\frac{14}{3}$ B) $\frac{14}{7}$ C) $\frac{17}{3}$ D) $\frac{17}{7}$

Answer: D

46) $3\frac{4}{5}$

A) $\frac{19}{5}$ B) $\frac{15}{5}$ C) $\frac{15}{4}$ D) $\frac{19}{4}$

Answer: A

47) $4\frac{3}{5}$

A) $\frac{20}{3}$ B) $\frac{20}{5}$ C) $\frac{23}{5}$ D) $\frac{23}{3}$

Answer: C

48) $24\frac{8}{9}$

A) 40 B) $\frac{224}{9}$ C) $\frac{64}{3}$ D) 384

Answer: B

Convert the improper fraction to a mixed number.

49) $\frac{28}{3}$

A) $10\frac{1}{3}$ B) $9\frac{1}{3}$ C) $\frac{1}{3}$ D) $8\frac{1}{7}$

Answer: B

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50) $\frac{23}{5}$

A) $4\frac{3}{5}$ B) $5\frac{3}{5}$ C) $4\frac{3}{7}$ D) $3\frac{3}{5}$

Answer: A

51) $\frac{37}{6}$

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

Answer: D

52) $\frac{64}{11}$

A) $64\frac{64}{11}$ B) $64\frac{11}{64}$ C) $\frac{11}{64}$ D) $5\frac{9}{11}$

Answer: D

53) $\frac{138}{11}$

A) $12\frac{6}{11}$ B) $138\frac{11}{138}$ C) $\frac{11}{138}$ D) $138\frac{138}{11}$

Answer: A

Identify the natural number as prime or composite. If the number is composite, find its prime factorization.

54) 29

A) 2 • 13 B) 2 • 2 • 7 C) 2 • 3 • 5 D) prime

Answer: D

55) 30

A) 2 • 2 • 5 B) 2 • 3 • 5 C) 3 • 3 • 2 D) prime

Answer: B

56) 12

A) 4 • 2 B) 3 • 3 C) 2 • 2 • 3 D) prime

Answer: C

57) 28

A) 2 • 7 • 7 B) 2 • 7 C) 2 • 2 • 7 D) prime

Answer: C

58) 126

A) 2 • 3 • 3 • 7 B) 2 • 2 • 3 • 7 C) 2 • 3 • 7 D) prime

Answer: A

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59) 612

A) $2 \cdot 2 \cdot 2 \cdot 2 \cdot 17$ B) $2 \cdot 2 \cdot 3 \cdot 3 \cdot 17$ C) $3 \cdot 3 \cdot 3 \cdot 3 \cdot 17$ D) prime

Answer: B

60) 290

A) $5 \cdot 5 \cdot 29$ B) $2 \cdot 5 \cdot 29$ C) $2 \cdot 2 \cdot 29$ D) prime

Answer: B

61) 10

A) $3 \cdot 7$ B) $4 \cdot 4$ C) $2 \cdot 5$ D) prime

Answer: C

Write the fraction in lowest terms.

62) $\frac{12}{21}$

A) $\frac{4}{7}$ B) $\frac{4}{3}$ C) $\frac{3}{7}$ D) $\frac{12}{21}$

Answer: A

63) $\frac{70}{90}$

A) $\frac{7}{10}$ B) $\frac{10}{9}$ C) $\frac{7}{9}$ D) $\frac{70}{90}$

Answer: C

64) $\frac{15}{41}$

A) $\frac{1}{41}$ B) $\frac{7}{20}$ C) $\frac{15}{41}$ D) $\frac{20}{7}$

Answer: C

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

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

Answer: B

66) $\frac{100}{125}$

A) $\frac{100}{125}$ B) $\frac{25}{5}$ C) $\frac{4}{5}$ D) $\frac{4}{25}$

Answer: C

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67) $\frac{51}{57}$

A) $\frac{3}{19}$ B) $\frac{17}{3}$ C) $\frac{51}{57}$ D) $\frac{17}{19}$

Answer: D

68) $\frac{247}{323}$

A) $\frac{19}{17}$ B) $\frac{13}{19}$ C) $\frac{13}{17}$ D) $\frac{247}{323}$

Answer: C

69) $\frac{123}{137}$

A) $\frac{61}{68}$ B) $\frac{61}{123}$ C) $\frac{137}{61}$ D) $\frac{123}{137}$

Answer: D

70) $\frac{474}{462}$

A) $\frac{79}{77}$ B) $\frac{154}{158}$ C) $\frac{474}{462}$ D) $\frac{158}{154}$

Answer: A

71) $\frac{205}{492}$

A) $\frac{205}{492}$ B) $\frac{12}{5}$ C) $\frac{5}{12}$ D) $\frac{492}{205}$

Answer: C

Perform the indicated operation. Where possible, reduce the answer to its lowest terms.

72) $\frac{3}{7} \cdot \frac{2}{5}$

A) $\frac{14}{15}$ B) $\frac{5}{12}$ C) $\frac{35}{6}$ D) $\frac{6}{35}$

Answer: D

73) $\frac{2}{5} \cdot \frac{4}{7}$

A) $\frac{7}{10}$ B) $\frac{1}{2}$ C) 1 D) $\frac{8}{35}$

Answer: D

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74) $72 \cdot \frac{5}{8}$

A) 45 B) 40 C) $\frac{5189}{400}$ D) $\frac{360}{8}$

Answer: A

75) $350 \cdot \frac{3}{5}$

A) 210 B) $\frac{1{,}050}{5}$ C) 180 D) $\frac{122503}{5}$

Answer: A

76) $\frac{2}{3} \cdot 138$

A) 94 B) $\frac{276}{3}$ C) $\frac{19046}{3}$ D) 92

Answer: D

77) $\left(2\frac{2}{5}\right)\left(3\frac{1}{3}\right)$

A) $6\frac{9}{15}$ B) 13 C) 8 D) 9

Answer: C

78) $\frac{1}{4} \div \frac{3}{8}$

A) $\frac{3}{4}$ B) $\frac{1}{3}$ C) $\frac{2}{3}$ D) $\frac{3}{32}$

Answer: C

79) $\frac{2}{13} \div \frac{8}{19}$

A) $\frac{5}{16}$ B) $\frac{19}{52}$ C) $\frac{16}{247}$ D) $\frac{247}{16}$

Answer: B

80) $\frac{6}{17} \div \frac{9}{19}$

A) $\frac{12}{17}$ B) $\frac{37}{51}$ C) $\frac{38}{51}$ D) $\frac{38}{49}$

Answer: C

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81) $\frac{4}{17} \div \frac{9}{14}$

A) $\frac{56}{153}$ B) $\frac{56}{151}$ C) $\frac{55}{153}$ D) $\frac{6}{17}$

Answer: A

82) $\frac{4}{11} \div \frac{7}{17}$

A) $\frac{68}{77}$ B) $\frac{68}{75}$ C) $\frac{67}{77}$ D) $\frac{6}{7}$

Answer: A

83) $\frac{4}{19} \div \frac{7}{18}$

A) $\frac{10}{19}$ B) $\frac{72}{131}$ C) $\frac{72}{133}$ D) $\frac{71}{133}$

Answer: C

84) $4\frac{5}{6} \div 2\frac{1}{3}$

A) $2\frac{2}{14}$ B) $3\frac{1}{14}$ C) $2\frac{1}{13}$ D) $2\frac{1}{14}$

Answer: D

85) $\frac{3}{8} + \frac{3}{8}$

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

Answer: C

86) $\frac{14}{62} + \frac{10}{62}$

A) $\frac{13}{32}$ B) $\frac{12}{31}$ C) $\frac{11}{31}$ D) $\frac{11}{30}$

Answer: B

87) $\frac{5}{7} + \frac{1}{7}$

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

Answer: A

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88) $\frac{3}{11} + \frac{7}{11}$

A) $\frac{9}{11}$ B) $\frac{9}{10}$ C) $\frac{11}{12}$ D) $\frac{10}{11}$

Answer: D

89) $\frac{6}{22} + \frac{3}{22}$

A) $\frac{8}{21}$ B) $\frac{9}{22}$ C) $\frac{4}{11}$ D) $\frac{10}{23}$

Answer: B

90) $\frac{3}{8} - \frac{2}{8}$

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

Answer: B

91) $\frac{7}{21} - \frac{6}{21}$

A) $\frac{1}{3}$ B) $\frac{1}{2}$ C) $\frac{1}{21}$ D) $\frac{1}{7}$

Answer: C

92) $\frac{8}{25} - \frac{5}{25}$

A) $\frac{1}{2}$ B) $\frac{2}{3}$ C) $\frac{3}{25}$ D) $\frac{13}{25}$

Answer: C

93) $\frac{25}{42} - \frac{7}{42}$

A) $\frac{3}{7}$ B) $\frac{2}{7}$ C) $\frac{2}{3}$ D) $\frac{16}{21}$

Answer: A

94) $\frac{7}{8} - \frac{3}{8}$

A) $\frac{1}{4}$ B) $\frac{2}{3}$ C) $\frac{1}{2}$ D) $\frac{5}{8}$

Answer: C

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95) $\frac{5}{8} + \frac{2}{15}$

A) $\frac{7}{23}$ B) $\frac{91}{23}$ C) $\frac{7}{120}$ D) $\frac{91}{120}$

Answer: D

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

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

Answer: A

97) $\frac{1}{7} - \frac{1}{12}$

A) $\frac{5}{7}$ B) $\frac{5}{84}$ C) $\frac{1}{84}$ D) $\frac{1}{7}$

Answer: B

98) $\frac{5}{7} - \frac{1}{2}$

A) $\frac{3}{14}$ B) $\frac{4}{7}$ C) $\frac{1}{7}$ D) $\frac{4}{9}$

Answer: A

99) $\frac{4}{5} - \frac{3}{20}$

A) $\frac{7}{10}$ B) $\frac{1}{20}$ C) $\frac{3}{5}$ D) $\frac{13}{20}$

Answer: D

100) $\frac{9}{16} - \frac{8}{15}$

A) $\frac{7}{16}$ B) $\frac{7}{240}$ C) $\frac{1}{16}$ D) $\frac{1}{240}$

Answer: B

101) $\frac{7}{9} - \frac{1}{12}$

A) $\frac{25}{36}$ B) $\frac{13}{18}$ C) $\frac{2}{3}$ D) $\frac{1}{2}$

Answer: A

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102) $20\frac{1}{4} + 19\frac{3}{8}$

A) $20\frac{5}{8}$ B) $38\frac{5}{8}$ C) $40\frac{5}{8}$ D) $39\frac{5}{8}$

Answer: D

103) $16\frac{2}{5} + 19\frac{1}{4}$

A) $36\frac{13}{20}$ B) $34\frac{13}{20}$ C) $35\frac{13}{20}$ D) $16\frac{13}{20}$

Answer: C

Determine if the given value is a solution to the equation.

104) $\frac{1}{5}x = 5;\ 25$

A) solution B) not a solution

Answer: A

105) $w - \frac{2}{7} = \frac{5}{7};\ 1\frac{2}{7}$

A) not a solution B) solution

Answer: A

106) $10 - \frac{1}{3}z = \frac{1}{7}z;\ 21$

A) solution B) not a solution

Answer: A

107) $\frac{1}{7}y + \frac{1}{3}y = 7;\ 29\frac{2}{5}$

A) solution B) not a solution

Answer: B

108) $\frac{1}{5}(x - 5) + 3 = \frac{2}{7}(3x - 7);\ 6$

A) solution B) not a solution

Answer: B

Translate from English to an algebraic expression or equation, whichever is appropriate. Let the variable x represent the number.

109) $\frac{1}{5}$ of a number

A) $x - \frac{1}{5}$ B) $x + \frac{1}{5}$ C) $\frac{1}{5}x$ D) $5x$

Answer: C

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110) A number increased by $\frac{1}{6}$ of itself

A) $x - \frac{1}{6}x$ B) $x + 6x$ C) $2x + \frac{1}{6}$ D) $x + \frac{1}{6}x$

Answer: D

111) A number decreased by $\frac{1}{9}$ is half of that number.

A) $x - \frac{1}{9} + \frac{1}{2}x$ B) $x = \frac{1}{9} - \frac{1}{2}x$ C) $x + \frac{1}{9} = \frac{1}{2}x$ D) $x - \frac{1}{9} = \frac{1}{2}x$

Answer: D

112) The product of $\frac{3}{5}$ and a number increased by 7.

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

Answer: C

113) The difference of $\frac{1}{3}$ of a number and $\frac{1}{9}$ of a number is 15.

A) $\frac{1}{3}x = \frac{1}{9}x - 15$ B) $\frac{1}{3}x - \frac{1}{9} = 15$ C) $\frac{1}{3}x - \frac{1}{9}x = 15$ D) $\frac{1}{3}x + \frac{1}{9}x = 15$

Answer: C

114) The product of $\frac{2}{3}$ and a number, decreased by 8, is 4 more than the number.

A) $\frac{2}{3}x - 8 = x + 4$ B) $\frac{2}{3}x - 8 = x - 4$ C) $\frac{2}{3}x + 8 = x + 4$ D) $\frac{2}{3}x - 8 + x = 4$

Answer: A

Solve the problem.

115) Use the formula $F = \frac{9}{5}C + 32$ to convert -30°C to degrees Fahrenheit.

A) -34.6°F B) -22°F C) -86°F D) 1°F

Answer: B

116) Use the formula $C = \frac{5}{9}(F - 32)$ to convert 230°F to degrees Celsius.

A) 145.6°C B) 110°C C) 95.8°C D) 446°C

Answer: B

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117) The formula $H = \frac{3}{5}(215 - a)$ gives the heart rate in beats per minute of a person who is a years old. Find the heart rate of a person who is 30 years old. Round to the nearest whole number.

A) 87 beats per minute
B) 360 beats per minute
C) 99 beats per minute
D) 111 beats per minute

Answer: D

Write a positive or negative integer that describes the situation.

118) 122 feet above sea level

A) 122
B) -122

Answer: A

119) 43° below zero

A) -43
B) 43

Answer: A

120) $278 loss

A) -278
B) 278

Answer: A

121) 25-pound gain

A) 25
B) -25

Answer: A

122) losing 29 cents

A) -29
B) 29

Answer: A

123) $4,780 out of debt

A) -4,780
B) 4,780

Answer: B

124) The team gave up 18 points.

A) 18
B) -18

Answer: B

125) a hike of 170 feet down into a subterranean cave

A) -170
B) 170

Answer: A

Determine whether natural numbers, whole numbers, integers, rational numbers, or all real numbers are appropriate for the situation.

126) heights of NBA players

A) whole numbers
B) all real numbers
C) rational numbers
D) integers

Answer: C

127) number of people in attendance at a college baseball game

A) rational numbers
B) natural numbers
C) whole numbers
D) integers

Answer: B

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128) the number of dogs a person owns

A) natural numbers B) whole numbers C) integers D) all real numbers

Answer: B

129) values of A given by the formula $A = \pi r^2$, where A is the area of a circle with radius r

A) integers B) rational numbers C) whole numbers D) all real numbers

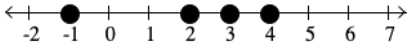
Answer: D

Graph the numbers on a number line.

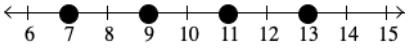
130) -1, 1, 3, 5



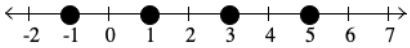
A)



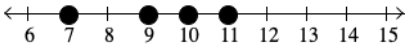
B)



C)



D)

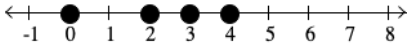


Answer: C

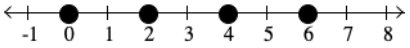
131) -8, -6, -4, -2



A)



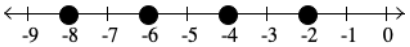
B)



C)

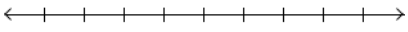


D)

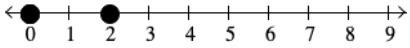


Answer: D

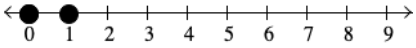
132) $-3\frac{2}{3}$, -1, 1, $3\frac{2}{3}$



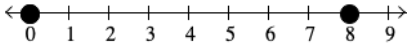
A)



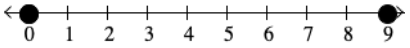
B)



C)



D)



Answer: B

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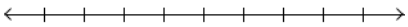
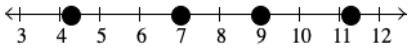
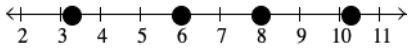
133) $-5\frac{3}{4}$, -3, -1, $1\frac{1}{4}$



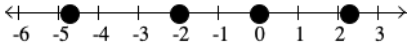
A)



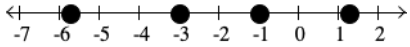
B)



C)

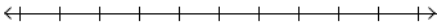


D)

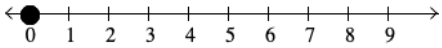


Answer: D

134) $-\frac{14}{3}$, -2, 0, $\frac{8}{3}$



A)



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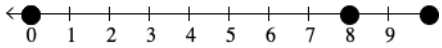

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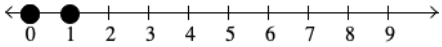
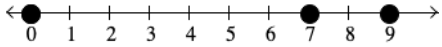
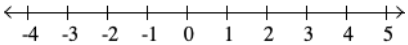


D)

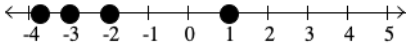


Answer: A

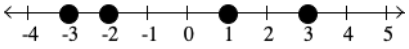
135) -3.75, -1, 1, 3.25



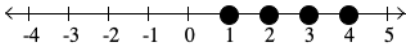
A)



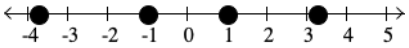
B)



C)



D)



Answer: D

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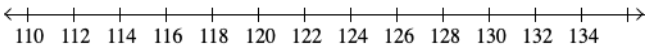
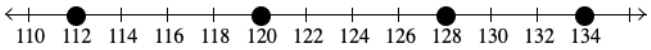
Solve.

136) The table shows the record high temperatures for four U.S. states. Graph the four record high temperatures on a number line.

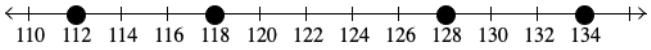
State	Record High (°F)
Arizona	128
California	134
Georgia	112
Washington	118



A)



B)



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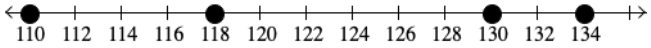
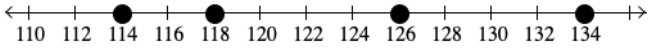


D)



Answer: B

Express the rational number as a decimal.

137) $\frac{1}{8}$

A) 0.013 B) 0.125 C) 1.25 D) 8

Answer: B

138) $\frac{13}{20}$

A) 0.065 B) 1.538 C) 0.65 D) 6.5

Answer: C

139) $\frac{47}{8}$

A) 5.875 B) 0.588 C) 0.17 D) 58.75

Answer: A

140) $\frac{4}{15}$

A) 0.26 B) $0.\overline{266}$ C) $0.\overline{26}$ D) $0.2\overline{6}$

Answer: D

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141) $-\frac{2}{11}$

A) $-0.1\overline{8}$ B) -0.18 C) $-0.\overline{18}$ D) $-0.\overline{181}$

Answer: C

List all the elements of B that are elements of the given set.

142) B = {9, $\sqrt{8}$, -14, 0, $\frac{0}{1}$, $\sqrt{4}$} Integers

A) 9, 0 B) 9, 0, $\sqrt{4}$ C) 9, -14, 0 D) 9, -14, 0, $\frac{0}{1}$, $\sqrt{4}$

Answer: D

143) B = {16, $\sqrt{6}$, -6, 0, $\frac{0}{9}$, $\sqrt{4}$} Whole numbers

A) 16, -6, 0, $\sqrt{4}$ B) 16, 0, $\frac{0}{9}$, $\sqrt{4}$ C) 16, 0 D) 16, -6, 0

Answer: B

144) B = {9, $\sqrt{7}$, -14, 0, $\frac{0}{25}$, $\sqrt{25}$} Natural numbers

A) 9, $\sqrt{25}$ B) 9, 0, $\frac{0}{9}$ C) 9, 0 D) 9, 0, $\sqrt{25}$

Answer: A

145) B = {11, $\sqrt{8}$, -14, 0, $\frac{0}{1}$, $\sqrt{25}$, $\frac{-6}{0}$} Real numbers

A) 11, -14, 0, $\frac{0}{1}$, $\sqrt{25}$ B) 11, -14, 0, $\sqrt{25}$

C) 11, -14, 0, $\frac{0}{1}$, $\frac{-6}{0}$ D) 11, $\sqrt{8}$, -14, 0, $\frac{0}{1}$, $\sqrt{25}$

Answer: D

146) B = {7, $\sqrt{6}$, -9, 0, $\frac{0}{4}$, $\sqrt{9}$, $\frac{-2}{0}$, 0.23} Rational numbers

A) $\sqrt{6}$, $\frac{0}{4}$, 0.23 B) 7, 0, $\sqrt{9}$

C) 7, -9, 0, $\frac{0}{4}$, $\sqrt{9}$, 0.23 D) $\sqrt{6}$, $\sqrt{9}$

Answer: C

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147) B = {19, $\sqrt{5}$, -7, 0, $\frac{0}{8}$, $\sqrt{4}$, $\frac{-2}{0}$, 0.24} Irrational numbers

A) $\sqrt{5}$, $\sqrt{4}$ B) $\sqrt{5}$, $\frac{-2}{0}$ C) $\sqrt{5}$ D) $\sqrt{5}$, $\sqrt{4}$, 0.24

Answer: C

Insert either < or > in the area between the pair of numbers to make a true statement.

148) -7 ___ -6

A) < B) >

Answer: A

149) 1.6 ___ 6.2

A) < B) >

Answer: A

150) -27 ___ -78

A) < B) >

Answer: B

151) 47 ___ -47

A) > B) <

Answer: A

152) 20 ___ 200

A) < B) >

Answer: A

153) -20 ___ -3

A) < B) >

Answer: A

154) $-\frac{3}{4}$ ___ $-\frac{2}{17}$

A) < B) >

Answer: A

155) $\frac{9}{10}$ ___ $\frac{17}{20}$

A) > B) <

Answer: A

156) $-\frac{5}{9}$ ___ $-\frac{9}{16}$

A) < B) >

Answer: B

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157) $\frac{14}{17}$ ___ $\frac{11}{12}$

A) < B) >

Answer: A

158) |-3| _____ |-16|

A) = B) < C) >

Answer: B

Determine whether the inequality is true or false.

159) 2 > 13

A) True B) False

Answer: B

160) 20 ≥ 3

A) True B) False

Answer: A

161) -91 < 0

A) True B) False

Answer: A

162) 12 < -12

A) True B) False

Answer: B

163) 24 ≤ 20

A) True B) False

Answer: B

164) -2 ≤ 6

A) False B) True

Answer: B

165) 12 > 6

A) True B) False

Answer: A

166) -3 ≥ 17

A) False B) True

Answer: A

Find the absolute value.

167) |-22|

A) 22 B) -22 C) 44 D) 0

Answer: A

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168) |19|

A) 38 B) -19 C) 19 D) 0

Answer: C

169) |-15|

A) 0 B) -15 C) 30 D) 15

Answer: D

170) $|\sqrt{6}|$

A) $\sqrt{6}$ B) 0 C) $\sqrt{-6}$ D) $-\sqrt{6}$

Answer: A

171) $\left|\frac{4}{5}\right|$

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

Answer: A

172) $\left|-\frac{4}{5}\right|$

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

Answer: B

An algebraic expression is given. Use the expression to answer the following questions.

a) How many terms are there in the algebraic expression?

b) What is the numerical coefficient of the first term?

c) What is the constant term?

d) Does the algebraic expression contain like terms? If so, what are the like terms?

173) 15x

A) a) 1
b) 15
c) none
d) no

B) a) 1
b) 1
c) none
d) no

C) a) 1
b) 15
c) 15x
d) no

D) a) 2
b) 15
c) none
d) no

Answer: A

174) 5x + 6

A) a) 1
b) 5
c) 6
d) no

B) a) 2
b) 5
c) 6
d) no

C) a) 2
b) 6
c) 5x
d) no

D) a) 2
b) 5
c) 6
d) yes, 5x and 6

Answer: B

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175) x + 4 + 7x

A) a) 3
b) 1
c) 4
d) yes, x and 7x

B) a) 3
b) 1
c) 4
d) no

C) a) 3
b) 7
c) 4
d) yes, x and 7x

D) a) 2
b) 1
c) 4
d) yes, x and 7x

Answer: A

176) 5y + 1 + 2x

A) a) 3
b) 2
c) 1
d) no

B) a) 3
b) 5
c) 1
d) no

C) a) 2
b) 5
c) 1
d) no

D) a) 3
b) 5
c) 1
d) yes, 5y and 2x

Answer: B

Use the commutative property of addition to write an equivalent algebraic expression.

177) x + 8

A) x8
B) x + 8
C) 8 + x
D) 8x

Answer: C

178) 2 + 7x

A) 2x + 7
B) 2 + 7x
C) 2 - 7x
D) 7x + 2

Answer: D

179) 7x + 8y

A) 7x - 8y
B) 7y + 8x
C) 7x + 8y
D) 8y + 7x

Answer: D

180) 8(x + 7)

A) 7(x + 8)
B) 8(7 + x)
C) 8(x + 7)
D) (x + 7)8

Answer: B

Use the commutative property of multiplication to write an equivalent algebraic expression.

181) 6x

A) x6
B) 6x
C) x + 6
D) $\frac{6}{x}$

Answer: A

182) x + y3

A) x + 3y
B) 3y + x
C) x3 + y
D) y3 + x

Answer: A

183) 8x + 7

A) 7 + x8
B) 7 + 8x
C) 8 + 7x
D) x8 + 7

Answer: D

184) 2(x + 4)

A) (4 + x)2
B) (x + 2)4
C) (x + 4)2
D) 2(4 + x)

Answer: C

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Use an associative property to rewrite the algebraic expression. Once grouping has been changed, simplify the resulting algebraic expression.

185) 3 + (6 + x)

A) 3 + (6 + x); 3 + 6x B) (3 + 6) + x; 9 C) (3 + 6) + x; 9x D) (3 + 6) + x; 9 + x

Answer: D

186) 6(3x)

A) (6 • 3) + x; 18 + x B) (6 • 3)x; 18 C) (6 + 3)x; 6 + 3x D) (6 • 3)x; 18x

Answer: D

Use the distributive property to rewrite the algebraic expression without parentheses. Simplify.

187) 8(x + 6)

A) 8x + 48 B) x + 48 C) 8x + 14 D) 8x + 6

Answer: A

188) 7(10x + 10)

A) 70x + 10 B) 140x C) 70x + 70 D) 17x + 17

Answer: C

189) $\frac{1}{5}(15x + 10)$

A) 3x + 10 B) 3x + 2 C) x D) 75x + 50

Answer: B

190) 9(x + y)

A) 9x + y B) 9x + 9y C) 9x - 9y D) 9xy

Answer: B

191) 6(x - 5)

A) 6x + 30 B) 6x - 30 C) 6x - 5 D) 6x - 11

Answer: B

192) 2(7x - 10)

A) 34x B) 9x - 12 C) 14x - 10 D) 14x - 20

Answer: D

193) $\frac{1}{4}(12x - 8)$

A) 48x - 32 B) 3x - 2 C) 3x - 8 D) x

Answer: B

194) (5x + 2)10

A) 50x + 20 B) 70x C) 15x + 12 D) 50x + 2

Answer: A

195) 5(4x + 6 + y)

A) 20x + 30 + y B) 20x + 6 + y C) 20x + 30 + 5y D) 20x + 6 + 5y

Answer: C

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196) 2(4x + 1 + 4y)

A) 8x + 2 + 8y B) 8x + 1 + 8y C) 8x + 1 + 4y D) 8x + 2 + 4y

Answer: A

Simplify the algebraic expression.

197) 5x + 9x

A) -4x B) 4x C) $14x^2$ D) 14x

Answer: D

198) 6x - 4x

A) 10x B) 2x C) -10x D) -2x

Answer: B

199) 9a + 4 - 5a

A) -4a + 4 B) 8a C) 4a + 4 D) 14a + 4

Answer: C

200) 7y + 2 - 3y + 4

A) 10y B) 4y - 2 C) 4y + 6 D) 10y + 6

Answer: C

201) 4 + (x + 2)

A) x + 6 B) x + 8 C) 6x D) 4x + 8

Answer: A

202) 12(2x + 6) - 3

A) 24x + 69 B) 14x + 15 C) 24x + 3 D) 24x + 36

Answer: A

203) 8 + 2(3x - 2)

A) 6x + 4 B) 3x + 4 C) 6x - 4 D) 6x + 6

Answer: A

204) 8(6a + 5b) + 3(3a + 5b)

A) 57a + 45b B) 51a + 45b C) 57a + 55b D) 57a + 10b

Answer: C

Write the English phrase as an algebraic expression, then simplify the expression. Let x represent the number.

205) The difference of 8 times a number and 3 times the number

A) 8x + 3x; 11x B) 8x - 3x; 5x C) 3x - 8x; -5x D) 8x - 3x; 11x

Answer: B

206) The product of 5 and a number, which is then added to the product of 13 and the number.

A) 13x + 5x; 65x B) 13x + 5x; 18x C) 5x • 13x; 65x D) 13x - 5x; 8x

Answer: B

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207) six times the product of 5 and a number.

A) 6(5x); 30x B) $6\left(\frac{x}{5}\right); \frac{6}{5}x$ C) 6 + 5x; 11x D) 6(x + 5); 6x + 5

Answer: A

208) eight times the sum of 3 and a number.

A) 8(x + 3); 8x + 24 B) 8(x + 3); 8x + 3 C) 8(3x); 24x D) 8(x - 3); 8x - 24

Answer: A

209) seven increased by the product of 3 and one less than a number.

A) 7 + x - 3; x + 4 B) 7 + 3(1 - x); 3x + 10

C) 7 + 3(x - 1); 3x + 4 D) 7 + 3(x + 1); 3x + 10

Answer: C

Find the sum using a number line.

210) 4 + (-2)

A) -2 B) 2 C) 6 D) -6

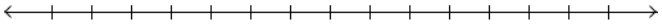
Answer: B

211) -5 + 2

A) 3 B) -3 C) -7 D) 7

Answer: B

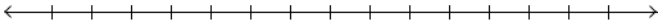
212) -6 + (-4)



A) -10 B) 2 C) 10 D) -2

Answer: A

213) 5 + (-5)



A) 10 B) 0 C) -10 D) 1

Answer: B

Find the sum without the use of a number line.

214) -5 + 0

A) 0 B) -50 C) 5 D) -5

Answer: D

215) 11 + (-11)

A) 22 B) -22 C) 1 D) 0

Answer: D

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216) -10 + (-10)
A) -20 B) 1 C) 0 D) 20
Answer: A

217) -24 + (-10)
A) 34 B) -34 C) -14 D) 14
Answer: B

218) -9 + 4
A) -5 B) 5 C) 13 D) -13
Answer: A

219) 19 + (-2)
A) 17 B) -17 C) -21 D) 21
Answer: A

220) 2 + (-16)
A) 18 B) -14 C) -18 D) 14
Answer: B

221) -61 + 49
A) -12 B) 110 C) 12 D) -110
Answer: A

222) 28 + (-9)
A) -37 B) 37 C) -19 D) 19
Answer: D

223) -3.1 + (3.4)
A) -6.5 B) 0.3 C) -10.54 D) 6.5
Answer: B

224) $-\frac{1}{9}+\left(-\frac{7}{9}\right)$
A) $\frac{8}{9}$ B) $-\frac{7}{8}$ C) $-\frac{7}{9}$ D) $-\frac{8}{9}$
Answer: D

225) $\left(\frac{3}{7}\right)+\left(-\frac{3}{4}\right)$
A) $-\frac{9}{56}$ B) $-\frac{9}{8}$ C) $-\frac{9}{28}$ D) $\frac{9}{28}$
Answer: C

226) 18 + (-4) + (-9)
A) 13 B) 23 C) 5 D) 31
Answer: C

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227) 20 + 1 + (-6)
A) 27 B) 25 C) 15 D) 13
Answer: C

228) -1 + 3 + (-9)
A) 13 B) -7 C) 11 D) -5
Answer: B

229) -3 + (-8) + (-5) + (-23)
A) -17 B) -33 C) -39 D) -23
Answer: C

230) 12 + (-4) + 19 + (-18)
A) -29 B) 53 C) 9 D) 7
Answer: C

231) -18 + (-15) + (-8) + (-2) + 17 + (-19)
A) -45 B) -13 C) 7 D) -79
Answer: A

232) 8 + (-16) + 5 + (-6) + 2 + (-11)
A) 4 B) -48 C) -18 D) -28
Answer: C

233) 1.4 + (-5.8) + (-3.0)
A) -1.4 B) 10.2 C) 4.2 D) -7.4
Answer: D

234) -3.6 + (-5.6) + (-8.4)
A) -10.4 B) -17.6 C) 0.8 D) 6.4
Answer: B

235) -5.1 + 20.4 + (-12.7)
A) 12.8 B) 2.6 C) 38.2 D) 28
Answer: B

Simplify the algebraic expression.

236) -2x + 4x
A) 6x B) -2x C) -6x D) 2x
Answer: D

237) 5y + (-7y)
A) -2y B) 12y C) -12y D) 2y
Answer: A

238) -6a + (-9a)
A) 3a B) 15a C) -3a D) -15a
Answer: D

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239) 2x + (-1) + (-7x) + 7

A) -5x + 6 B) -5x + 8 C) 5x + 8 D) 5x - 6

Answer: A

240) -10 + 4x + 1 + (-8x)

A) 4x - 9 B) -12x - 9 C) -4x - 9 D) -4x + 9

Answer: C

241) 5(2y - 3) + 3

A) 10y + 12 B) -10y - 12 C) 10y - 12 D) 10y - 18

Answer: C

242) 4(2x - 6) - 4x + 10

A) 4x + 14 B) 4x - 14 C) 12x - 14 D) 4x + 34

Answer: B

243) 8(6 - 6a) + 10(10a - 6)

A) 52a - 12 B) - 52a - 12 C) - 52a + 12 D) 52a + 12

Answer: A

Solve.

244) The temperature at 5 p.m. on January 29 was -14°F. By 7 p.m. the temperature had risen 21 degrees. Find the temperature at 7 p.m.

A) -35°F B) 35°F C) -7°F D) 7°F

Answer: D

245) A deep-sea diver dives from the surface to 55 feet below the surface. She then dives down 23 more feet. Find the diver's depth.

A) 32 feet below the surface B) 81 feet below the surface

C) 78 feet below the surface D) 30 feet below the surface

Answer: C

246) A deep-sea diver dives from the surface to 244 meters below the surface and then swims up 8 meters, down 13 meters, down another 29 meters, and then up 22 meters. Find the diver's depth after these movements.

A) 172 meters below the surface B) 272 meters below the surface

C) 198 meters below the surface D) 256 meters below the surface

Answer: D

247) The difference between a country's exports and imports is called the country's trade balance. If one country had a trade balance of -$96 billion one year, $137 billion the following year, and -$38 billion the third year, what was the total trade balance for these three years?

A) 3 billion dollars B) 271 billion dollars

C) -271 billion dollars D) -3 billion dollars

Answer: A

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248) Scores in golf can be positive or negative integers. For example, a score of 7 over par can be represented by +7 and a score of 4 under par can be represented by -4. If Donna had scores of 5 over par, 6 under par, and 8 under par for three games of golf, what was her total score?

A) 19 over par B) 19 under par C) 9 over par D) 9 under par

Answer: D

Perform the indicated subtraction.

249) 20 - 10

A) -30 B) 30 C) -10 D) 10

Answer: D

250) 10 - 18

A) 8 B) -8 C) 28 D) -28

Answer: B

251) 12 - (-4)

A) -16 B) 16 C) 8 D) -8

Answer: B

252) 5 - (-26)

A) -31 B) 21 C) 31 D) -21

Answer: C

253) 65 - (-11)

A) 76 B) -76 C) -54 D) 54

Answer: A

254) -9 - (-22)

A) 31 B) -31 C) 13 D) -13

Answer: C

255) -7 - (-7)

A) 0 B) -14 C) 1 D) 14

Answer: A

256) 12 - 12

A) 0 B) -24 C) 24 D) 1

Answer: A

257) 13 - (-13)

A) 26 B) 0 C) -26 D) 1

Answer: A

258) 0 - 13

A) -13 B) 13 C) 1 D) 0

Answer: A

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259) 0 - (-10)

A) 1 B) 0 C) -10 D) 10

Answer: D

260) $\frac{1}{11} - \frac{2}{11}$

A) $-\frac{1}{11}$ B) $\frac{1}{11}$ C) $-\frac{3}{11}$ D) $\frac{3}{11}$

Answer: A

261) $\frac{4}{9} - \left(-\frac{4}{9}\right)$

A) $\frac{8}{9}$ B) $\frac{7}{9}$ C) $\frac{7}{8}$ D) $\frac{9}{10}$

Answer: A

262) $-\frac{4}{5} - \frac{7}{10}$

A) $-\frac{3}{10}$ B) $-\frac{3}{2}$ C) $\frac{3}{2}$ D) $-\frac{11}{10}$

Answer: B

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

A) $-\frac{3}{10}$ B) $\frac{1}{10}$ C) $-\frac{1}{10}$ D) $-\frac{11}{10}$

Answer: C

264) -1.1 - (4.0)

A) -2.9 B) 5.1 C) 2.9 D) -5.1

Answer: D

265) -6.7 - 2.2

A) 4.5 B) -4.5 C) 8.9 D) -8.9

Answer: D

266) -0.54 - (0.70)

A) -1.24 B) -0.06 C) -0.378 D) -0.16

Answer: A

267) 0.84 - (-0.71)

A) 0.596,4 B) 1.55 C) 0.13 D) 1.65

Answer: B

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Simplify the series of additions and subtractions.

268) -15 + 13 - 10

A) 8 B) -38 C) -12 D) -18

Answer: C

269) -7 + 6 - 14

A) -15 B) 1 C) 13 D) -27

Answer: A

270) 1 + 4 - 12

A) 9 B) -15 C) -7 D) 17

Answer: C

271) 6 + (-12) - 1 + 9

A) 2 B) -14 C) -16 D) 4

Answer: A

272) 11 + 14 - (-11) + (-7)

A) 1 B) 43 C) 15 D) 29

Answer: D

273) $\frac{5}{12} - \frac{1}{8} - \frac{1}{24}$

A) $-\frac{1}{4}$ B) $\frac{1}{12}$ C) $\frac{12}{48}$ D) $\frac{1}{4}$

Answer: D

274) $\frac{3}{7} - \frac{5}{14} + \frac{3}{7} - \frac{3}{14}$

A) $\frac{2}{7}$ B) $\frac{6}{7}$ C) $\frac{1}{14}$ D) $\frac{1}{7}$

Answer: A

275) 8.4 - 7 - 16.1

A) 31.5 B) 17.5 C) -0.7 D) -14.7

Answer: D

Identify the terms in the algebraic expression.

276) 2x - 7y

A) - 2x, -7y B) - 2x, 7y C) 2x, -7y D) 2x, 7y

Answer: C

277) 7x - 6xy - y

A) 7x, 6xy, y B) 7x, -6xy C) 7x, -6xy, -y D) 7x, -6xy, y

Answer: C

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278) 9a - 5ab - 4

A) 9a, -5ab, -4 B) 9a, -5ab, 4 C) 9a, -5ab D) 9a, 5ab, -4

Answer: A

Simplify the algebraic expression.

279) 4x - 9x

A) -5x B) 13x C) -13x D) 5x

Answer: A

280) 5 + 4y - 9y

A) 5 - 5y B) 5 + 5y C) 10y D) -5 - 5y

Answer: A

281) 5x - 14 - 9x

A) 4x - 14 B) -4x - 14 C) -4x + 14 D) -14x - 14

Answer: B

282) 3 - 3y - 5 - 7y

A) -2 - 10y B) -8 - 10y C) -2 + 10y D) -2 - 4y

Answer: A

283) 7 - (-4x) + 9x - (-1)

A) 8 + 13x B) 8 + 5x C) 6 + 13x D) 6 + 5x

Answer: A

Solve.

284) Trader Tower stands at 2,064 feet high. Exchange Emporium is 801 feet tall. How much taller is Trader Tower than Exchange Emporium?

A) -2,865 ft B) 2,865 ft C) 1,263 ft D) -1,263 ft

Answer: C

285) The temperature at 5:00 was -7°C. Four hours later, it was -10°C. What was the change in temperature?

A) 17°C B) -17°C C) -3°C D) 3°C

Answer: C

286) City A has an elevation of 10,810 feet above sea level while city B has an elevation of 145 feet below sea level. Find the difference in elevation between those two cities.

A) 11,055 ft B) 10,955 ft C) -10,565 ft D) -10,665 ft

Answer: B

287) The difference between a country's exports and imports is called the country's trade balance. If a country had $ 118 billion in exports and $202 billion in imports, what was the country's trade balance?

A) -$84 billion B) $320 billion C) -$320 billion D) $84 billion

Answer: A

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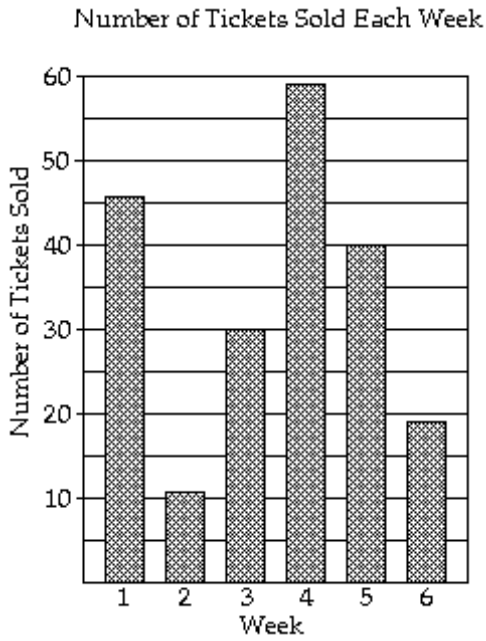
288) The bar graph shows the number of tickets sold each week by the garden club for their annual flower show.

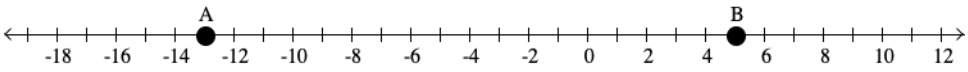


What is the difference in tickets sold from week 5 and week 6?

A) 21 tickets B) 59 tickets C) 31 tickets D) 26 tickets

Answer: A

289) Life expectancy for the average man in a certain country is 74.1 years; for a woman, it's 79.5 years. The number line, with points representing integers, indicates factors, many within our control, that can stretch or shrink one's probable life span. If you regularly work puzzles and you smoke cigarettes, do you stretch or shrink your life span? By how many years?



Years of Life Gained or Lost

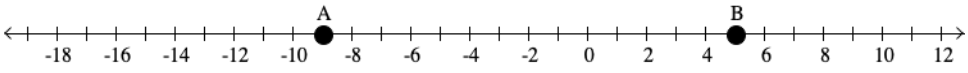
A denotes "Smoke cigarettes"

B denotes "Regularly work puzzles"

A) shrink by 8 yr B) stretch by 9 yr C) stretch by 10 yr D) shrink by 7 yr

Answer: A

290) Life expectancy for the average man in a certain country is 74.1 years; for a woman, it's 79.5 years. The number line, with points representing integers, indicates factors, many within our control, that can stretch or shrink one's probable life span. What is the difference in the life span between a person who regularly works puzzles and a person who frequently feels stressed?



Years of Life Gained or Lost

A denotes "Frequently feel stressed"

B denotes "Regularly work puzzles"

A) 5 yr B) 4 yr C) 14 yr D) 3 yr

Answer: C

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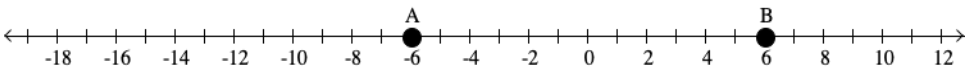
291) Life expectancy for the average man in a certain country is 74.1 years; for a woman, it's 79.5 years. The number line, with points representing integers, indicates factors, many within our control, that can stretch or shrink one's probable life span. What happens to the life span for a person who regularly works puzzles and a person who has less than 12 years of education?



Years of Life Gained or Lost

A denotes "Have less than 12 years of education"
B denotes "Regularly work puzzles"

A) shrinks by 6 yr B) no change C) stretches by 12 yr D) shrinks by 12 yr

Answer: B

Perform the indicated multiplication.

292) (7)(-11)

A) -84 B) -770 C) -177 D) -77

Answer: D

293) (-12)(4)

A) -52 B) -48 C) -148 D) -480

Answer: B

294) (5)(-6)

A) -30 B) 30 C) -20 D) -60

Answer: A

295) (-22)(-1)

A) -1 B) 1 C) 22 D) -22

Answer: C

296) 0(-17)

A) 0 B) 17 C) undefined D) -17

Answer: A

297) $\frac{1}{3}(-51)$

A) 17 B) $-\frac{1}{17}$ C) -27 D) -17

Answer: D

298) $-\frac{35}{18} \cdot \left(\frac{2}{7}\right)$

A) $-\frac{5}{9}$ B) $-\frac{35}{18}$ C) $\frac{5}{9}$ D) $\frac{9}{7}$

Answer: A

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299) $\frac{23}{8} \cdot \left(-\frac{11}{3}\right)$

A) $-\frac{253}{24}$ B) $-\frac{15}{16}$ C) 253 D) $\frac{45}{2}$

Answer: A

300) $-\frac{2}{9} \cdot \left(-\frac{1}{4}\right)$

A) $\frac{1}{18}$ B) $-\frac{1}{36}$ C) $-\frac{4}{17}$ D) $\frac{8}{17}$

Answer: A

301) 3.4(-2.54)

A) 0.86 B) 5.94 C) -8.636 D) 6.04

Answer: C

302) -2.0(-13)

A) -11 B) 15 C) -15 D) 26

Answer: D

303) (-3)(-5)(4)

A) -60 B) 50 C) 60 D) 160

Answer: C

304) (-9)(-3)(-3)

A) 81 B) 54 C) -71 D) -81

Answer: D

305) (-10)(-8)(-3)

A) -140 B) -250 C) 240 D) -240

Answer: D

306) (-3)(-4)(-1)(5)

A) 60 B) -60 C) -50 D) -160

Answer: B

307) (-10)(-10)(-7)(-1)

A) 700 B) 710 C) 600 D) -700

Answer: A

308) (-4)(-4)(-4)

A) -74 B) 64 C) -54 D) -64

Answer: D

309) (-3)(3)(-3)(-2)

A) 27 B) 54 C) -5 D) -54

Answer: D

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310) (-2)(3)(-1)(-3)(-3)

A) 18 B) -54 C) -5 D) 54

Answer: D

311) (-4)(2)(-3)(0)(-5)

A) -120 B) 24 C) 0 D) 120

Answer: C

312) (3)(5)(3)(-3)(-2)

A) 6 B) -135 C) 270 D) -270

Answer: C

Find the multiplicative inverse.

313) 24

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

Answer: D

314) $\frac{1}{3}$

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

Answer: B

315) $\frac{2}{7}$

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

Answer: A

316) -8

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

Answer: A

317) $-\frac{5}{8}$

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

Answer: D

318) 1

A) 0 B) $\frac{1}{10}$ C) -1 D) 1

Answer: D

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319) 0

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

Answer: C

Rewrite the division as multiplication involving a multiplicative inverse. Use the multiplication to find the given quotient.

320) $-45 \div 5$

A) $-\frac{1}{45} \cdot (5)$; $-\frac{1}{9}$ B) $-45 \cdot \left(-\frac{1}{5}\right)$; 9 C) $-45 \cdot \left(\frac{1}{5}\right)$; -9 D) $-45 \cdot \left(\frac{1}{5}\right)$; 9

Answer: C

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

A) $-28 \cdot \left(\frac{1}{7}\right)$; -4 B) $-28 \cdot \left(-\frac{1}{7}\right)$; -4 C) $-28 \cdot \left(-\frac{1}{7}\right)$; 4 D) $-\frac{1}{28} \cdot (-7)$; $\frac{1}{4}$

Answer: C

Perform the indicated division or state that the expression is undefined.

322) $\frac{10}{-2}$

A) 5 B) -6 C) -5 D) -4

Answer: C

323) $\frac{-36}{4}$

A) -10 B) -9 C) -8 D) 9

Answer: B

324) $\frac{-10}{-2}$

A) 6 B) 4 C) 5 D) -5

Answer: C

325) $\frac{32}{-2}$

A) 16 B) $-\frac{1}{16}$ C) -26 D) -16

Answer: D

326) $\frac{-30}{2}$

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

Answer: A

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327) $\frac{-180}{-9}$

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

Answer: D

328) $\frac{0}{-34}$

A) 0 B) 34 C) 1 D) undefined

Answer: A

329) $\frac{-42}{0}$

A) 42 B) 1 C) 0 D) undefined

Answer: D

330) -16 ÷ 4

A) 4 B) -3 C) -4 D) -5

Answer: C

331) 35 ÷ (-7)

A) 5 B) -5 C) -4 D) -6

Answer: B

332) -18 ÷ (-6)

A) 4 B) -3 C) 2 D) 3

Answer: D

333) -81 ÷ 3

A) -37 B) 27 C) -27 D) - $\frac{1}{27}$

Answer: C

334) 162 ÷ (-6)

A) - $\frac{1}{27}$ B) 27 C) -37 D) -27

Answer: D

335) -75 ÷ (-5)

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

Answer: D

336) 0 ÷ (-49)

A) 1 B) 0 C) 49 D) undefined

Answer: B

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337) $-15 \div 0$

A) 15 B) 0 C) 1 D) undefined

Answer: D

338) $\frac{-4.8}{6}$

A) 0.8 B) -0.8 C) -8 D) 8

Answer: B

339) $14 \div \left(-\frac{1}{5}\right)$

A) $-\frac{1}{70}$ B) 70 C) -70 D) -80

Answer: C

340) $-\frac{2}{13} \div \left(-\frac{2}{5}\right)$

A) $-\frac{5}{13}$ B) $\frac{13}{5}$ C) $\frac{5}{13}$ D) $-\frac{4}{65}$

Answer: C

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

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

Answer: C

342) $-\frac{2}{9} \div \frac{3}{8}$

A) $\frac{16}{27}$ B) $\frac{1}{12}$ C) $-\frac{1}{12}$ D) $-\frac{16}{27}$

Answer: D

343) $18 \div \left(-\frac{6}{5}\right)$

A) -16 B) -15 C) -14 D) 15

Answer: B

Simplify the algebraic expression.

344) $-4(9x)$

A) -36 B) 36x C) -36x D) -360x

Answer: C

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345) $-9\left(-\frac{4}{9}y\right)$

A) 4y B) 4 C) 9y D) -4y

Answer: A

346) 6x + x

A) 7 B) $7x^2$ C) $6x^2$ D) 7x

Answer: D

347) -16x + x

A) -17x B) 17x C) -15x D) 15x

Answer: C

348) 8b - 9b

A) b B) -b C) 17b D) -17b

Answer: B

349) -y + 7y

A) 6y B) -8y C) -6y D) 8y

Answer: A

350) -7(2x + 4)

A) -14x + 4 B) -14x + 28 C) 14x - 28 D) -14x - 28

Answer: D

351) -2(7x - 9)

A) 14x + 18 B) -14x + 9 C) -14x - 18 D) -14x + 18

Answer: D

352) -6(-4x + 3)

A) 24x + 3 B) 24x + 18 C) -24x - 18 D) 24x - 18

Answer: D

353) -(3x - 4)

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

Answer: C

354) 8(7y + 2) - 8(4y + 3)

A) -56y B) 24y + 3 C) 24y - 8 D) -4y - 5

Answer: C

355) 10(4y + 10) - (10y - 3)

A) 50y + 13 B) 30y + 103 C) -30y + 97 D) 50y + 7

Answer: B

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Determine whether the given number is a solution of the equation.

356) $11x = 9x - 6;\ -3$

A) not a solution B) solution

Answer: B

357) $-5m + 15 = -9m + 7;\ -2$

A) not a solution B) solution

Answer: B

358) $2(x + 5) = 8x - 18;\ -5$

A) solution B) not a solution

Answer: B

359) $8(2 - z) + 10z = 0;\ -8$

A) solution B) not a solution

Answer: A

360) $\frac{6y - 4}{4} = \frac{4y - 2}{5};\ -7$

A) solution B) not a solution

Answer: B

Solve.

361) The cost in dollars of having a car towed is given by the algebraic expression $3x + 40$, where x is the number of miles the car is towed. Find the cost of having a car towed 2 miles.

A) \$43 B) \$46 C) \$6 D) \$36

Answer: B

362) The speed in feet per second of a ball dropped from a tower is given by the algebraic expression $32t$ where t is the number of seconds since the ball was dropped. Find the speed of the ball after 11 seconds.

A) 352 ft/sec B) 342 ft/sec C) 11 ft/sec D) 32 ft/sec

Answer: A

363) The amount in ounces of water in a leaky bucket is given by the algebraic expression $117 - 9t$, where t is the time in minutes since the bucket was filled. Find the amount of water in the bucket after 3 minutes.

A) 27 oz B) 90 oz C) 144 oz D) 108 oz

Answer: B

364) A company's cost per radio when producing x thousand radios in a month is given by the algebraic expression $\frac{9x + 182}{x}$. Find the cost per radio when 13 thousand radios are produced in a month.

A) \$23 B) \$191 C) \$131 D) \$46

Answer: A

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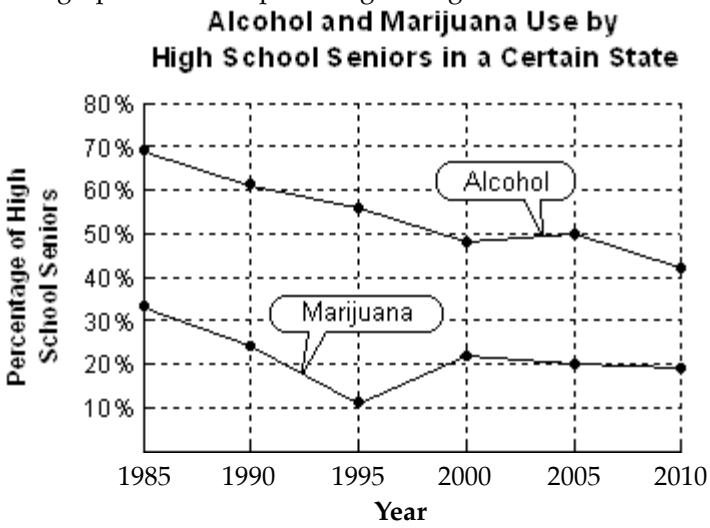
365) The cost in tens of thousands of dollars of removing x percent of a contaminant from a lake after an accidental chemical spill is given by the algebraic expression $\frac{77x}{100 - x}$. Find the cost of removing 93 percent of the chemical from the lake.

A) $716,100 B) $10,230,000 C) $7,700 D) $1,023

Answer: B

366) The line graph shows the percentage of high school seniors who used alcohol or marijuana in a certain state.



Use the appropriate line graph to estimate the percentage of seniors who used marijuana in 2,000.

A) 26% B) 22% C) 42% D) 48%

Answer: B

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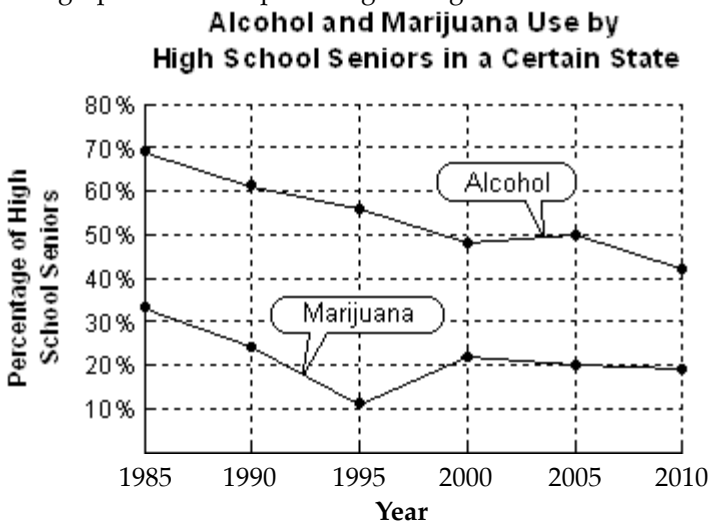
367) The line graph shows the percentage of high school seniors who used alcohol or marijuana in a certain state.



The formula A = -n + 67 can be used to determine the percentage of seniors who used alcohol. The formula M = -0.4n + 27 can be used to determine the percentage of seniors who used marijuana. In both formulas, n represents the number of years after 1985. Use the appropriate formula to determine the percentage of seniors who used marijuana in 2,010.

A) 42% B) 12% C) 22% D) 17%

Answer: D

Evaluate the exponential expression.

368) 9^2

A) 100 B) 81 C) 18 D) 512

Answer: B

369) 11^3

A) 33 B) 1,000 C) 1,331 D) 177,147

Answer: C

370) 9^4

A) 36 B) 6,561 C) 262,144 D) 729

Answer: B

371) 3^3

A) -9 B) -27 C) 9 D) 27

Answer: D

372) $(-7)^2$

A) -14 B) 49 C) 14 D) -49

Answer: B

373) $(-10)^3$

A) -729 B) 1,000 C) -1,000 D) -30

Answer: C

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374) $(-9)^4$

A) -6,561 B) 6,561 C) -36 D) 729

Answer: B

375) $(-6)^3$

A) 216 B) 18 C) -216 D) -18

Answer: C

376) -8^2

A) 64 B) -16 C) -81 D) -64

Answer: D

377) -10^3

A) -729 B) 1,000 C) -30 D) -1,000

Answer: D

378) -6^4

A) -1,296 B) 1,296 C) -24 D) -216

Answer: A

379) -4^4

A) 256 B) 16 C) -256 D) -16

Answer: C

380) -1^7

A) 1 B) -1 C) -7 D) 0

Answer: B

381) $(-1)^6$

A) 6 B) 1 C) -1 D) -6

Answer: B

Evaluate the algebraic expression for a) x = 4 and b) x = 18.

382) $8x^2 + 7x$

A) a) 92 b) 414 B) a) 60 b) 270 C) a) 156 b) 2,718 D) a) 100 b) 2,466

Answer: C

383) $4x^2 - 2x$

A) a) 81 b) 36 B) a) 56 b) 1,260 C) a) 72 b) 1,332 D) a) 32 b) 648

Answer: B

384) $-3x^2 - 5x$

A) a) -321 b) -144 B) a) -128 b) -2,592 C) a) -28 b) -882 D) a) -68 b) -1,062

Answer: D

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Simplify the algebraic expression, or state that the expression cannot be simplified.

385) $2x^9 + 9x^9$

A) cannot be simplified
B) $99x$
C) $11x^{18}$
D) $11x^9$

Answer: D

386) $3x^4 - 6x^4$

A) cannot be simplified
B) $-3x^4$
C) $-12x$
D) $-3x^8$

Answer: B

387) $2x^6 + 9x^3$

A) $11x^6$
B) $66x$
C) cannot be simplified
D) $11x^{12}$

Answer: C

388) $9x^4 - 5x^2$

A) cannot be simplified
B) $4x^8$
C) $16x$
D) $4x^4$

Answer: A

389) $22x^2 - 22x^2$

A) cannot be simplified
B) $-44x^2$
C) x^2
D) 0

Answer: D

Simplify the algebraic expression by removing parentheses and brackets.

390) $-10(8x + 4) + 7(8x + 9)$

A) $-120x$
B) $-24x + 23$
C) $-2x - 6$
D) $-24x + 4$

Answer: B

391) $(9y + 6) - (5y - 3)$

A) $14y + 9$
B) $4y + 9$
C) $4y - 9$
D) $4y + 3$

Answer: B

392) $-6(2x - 9) - 4x + 5$

A) $-16x - 49$
B) $16x + 59$
C) $8x + 59$
D) $-16x + 59$

Answer: D

393) $4[4(x - 3) + 1]$

A) $16x - 48$
B) $16x - 44$
C) $16x - 2$
D) $16x - 8$

Answer: B

394) $4 - 6[1 - (2x - 2)]$

A) $-2x - 14$
B) $12x + 10$
C) $12x - 14$
D) $-2x + 10$

Answer: C

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Use the order of operations to simplify the expression.

395) $7 - 6 \cdot 2$

A) -5 B) 5 C) 2 D) 19

Answer: A

396) $45 \div 15 \cdot (-3)$

A) 9 B) - 1 C) 3.75 D) -9

Answer: D

397) $9^2 - 5 \cdot 6$

A) 51 B) 96 C) 456 D) 216

Answer: A

398) $(10 + 23) \cdot (29 - 9)$

A) 53 B) 948 C) $\frac{33}{20}$ D) 660

Answer: D

399) $27 + (16 \cdot 21) - 21$

A) 882 B) 342 C) 43 D) 0

Answer: B

400) $20 \div 10(2) - 7$

A) $\frac{20}{13}$ B) -3 C) -6 D) 93

Answer: B

401) $7^2 - 6(3) + 20 \div 5$

A) 35 B) $\frac{51}{5}$ C) 125 D) 7

Answer: A

402) $61 - 8 \cdot 7 + 40 \div (-4)$

A) 361 B) -5 C) -25 D) -623

Answer: B

403) $(-3 - 7)(-5 + 2) - 6^4$

A) 1,296 B) -3 C) 1,326 D) -1,266

Answer: D

404) $\frac{13 + 7}{3^2 - 4}$

A) 2 B) 4 C) 6 D) 10

Answer: B

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405) $\frac{48(9 - 6) - 12}{3^2 - 3}$

A) 25 B) 22 C) 44 D) 24

Answer: B

406) $\frac{5 \cdot (4 + 7) + 5 \cdot 3}{5 \cdot (6 - 1)}$

A) $\frac{19}{5}$ B) 114 C) 2 D) $\frac{14}{5}$

Answer: D

407) $\frac{4 + (-5)^2 + 4 \cdot 4^2}{4^2 \cdot (7 - 4)}$

A) 0 B) $\frac{5}{2}$ C) 2 D) $\frac{31}{16}$

Answer: D

408) $\frac{16(-1) - (-4)(-3)}{2[-8 \div (-2 - 2)]}$

A) undefined B) - 7 C) 1 D) 7

Answer: B

409) $|10 - 15| \cdot -20 \div (-4)$

A) -25 B) -400 C) 400 D) 25

Answer: D

410) $(3 + 4)[5 + (7 + 3)]$

A) 57 B) 180 C) 105 D) 312

Answer: C

411) $7[-7 + 3(-2 + 8)]$

A) -172 B) -168 C) -31 D) 77

Answer: D

412) $4[1 + 6(6^2)]$

A) 868 B) 5,476 C) 21,904 D) 5,188

Answer: A

413) $3[2^2 + 7(7 + 2)]$

A) 165 B) 201 C) 69 D) 297

Answer: B

414) $22 - [10 - (2 - 10)] + (1 - 3)^3$

A) -4 B) 28 C) 12 D) -12

Answer: A

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415) [27 - (4 + 6) ÷ 2] - [1 + 24 ÷ 3]

A) 10 B) 20 C) 8 D) 13

Answer: D

Solve.

416) As the relative humidity increases, the temperature seems higher than it is. The formula $T = 0.110x + 64.22$ approximates the apparent temperature for an actual temperature of 70°F, where x is the relative humidity percentage. What is the apparent temperature (to the nearest degree) for an actual temperature of 70°F and a relative humidity of 20%?

A) 84°F B) 141°F C) 66°F D) 64°F

Answer: C

417) If a rock falls from a height of 90 meters above the ground, the height H (in meters) after x seconds can be approximated using the formula $H = 90 - 4.9x^2$. What is the height of the rock after 3 seconds?

A) 765.9 m B) 45.9 m C) -126.09 m D) 75.3 m

Answer: B

418) The formula $C = \frac{5}{9}(F - 32)$ expresses the relationship between Fahrenheit temperature, F, and Celsius temperature, C. Use the formula to convert 77°F to it equivalent temperature on the Celsius scale, rounded to the nearest degree.

A) 43°C B) 25°C C) 81°C D) 11°C

Answer: B

419) The winning times (in seconds) in a speed-skating event for men can be represented by the formula $T = 46.23 - 0.099x$, where x represents the year, with $x = 0$ corresponding to 1930. (For example in 2002, x would be 2002 - 1930 = 72.). According to the formula, what was the winning time in 1995? Round to the nearest hundredth.

A) 2,998.52 sec B) 40.79 sec C) 41.78 sec D) 39.80 sec

Answer: D

420) It is estimated that y, the number of items of a particular commodity (in millions) sold in the United States in year x, where x represents the number of years since 2000, is given by the formula $y = 1.58x + 4.82$. That is, $x = 0$ represents 2000, $x = 1$ represents 2001, and so on. According to the formula, how many items sold in 2005?

A) 12.72 million items B) 32.00 million items

C) 14.30 million items D) 4.82 million items

Answer: A

Perform the indicated operation or operations.

421) 4.1 - (-2.4)

A) 1.7 B) -1.7 C) -6.5 D) 6.5

Answer: D

422) -16 + 3 + (-7) + 16

A) -36 B) 42 C) -22 D) -4

Answer: D

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423) 3(-13)

A) -139 B) 39 C) -39 D) -36

Answer: C

424) $\left(-\frac{1}{2}\right) \div \left(-\frac{7}{3}\right)$

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

Answer: D

425) $\left(10\frac{1}{2}\right)\left(-3\frac{1}{6}\right)$

A) $-\frac{10}{3}$ B) $-\frac{399}{4}$ C) -10 D) $-\frac{133}{4}$

Answer: D

426) -48 ÷ 8

A) -5 B) -6 C) -7 D) 6

Answer: B

427) -5 - (6 - 13)

A) 2 B) 12 C) -12 D) -2

Answer: A

428) (-7)(-4) ÷ (9 - 13)

A) -4 B) 7 C) -112 D) -7

Answer: D

429) $(6 - 8)^2(4 - 6)^3$

A) -32 B) -4 C) 32 D) -16

Answer: A

430) $\frac{8(-3) - 2(3)}{-2(8 - 3)}$

A) 300 B) -3 C) 20 D) 3

Answer: D

Simplify the algebraic expression.

431) 8x - (3x - 5)

A) 5x + 5 B) -5x + 5 C) 5x - 5 D) -5x - 5

Answer: A

432) 8(4x - 5y) - (10x - 2y)

A) -22x + 38y B) 22x - 38y C) 22x - 42y D) 42x - 38y

Answer: B

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433) 2 - 6[5 - (6x + 1)]

A) -6x - 34 B) -6x - 22 C) 36x - 34 D) 36x - 22

Answer: D

Provide an appropriate response.

434) List all the rational numbers in this set.

$\left\{20, \sqrt{8}, -9, 0, \pi, \sqrt{9}, \frac{22}{7}, 0.66\right\}$

A) 20, -9, 0, $\sqrt{9}$, $\frac{22}{7}$, 0.66

B) 20, $\sqrt{8}$, -9, 0, $\sqrt{9}$, $\frac{22}{7}$, 0.66

C) 20, -9, 0, $\sqrt{9}$, 0.66

D) 20, -9, 0, $\sqrt{9}$, $\frac{22}{7}$

Answer: A

435) Insert either < or > in the area between the pair of numbers to make a true statement: -35 ___ -42.

A) < B) >

Answer: B

436) Find the absolute value: $|-15.8|$.

A) 15 B) 15.8 C) -15.8 D) -15

Answer: B

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

437) 7(x - 7); x = 3

A) 28 B) -24 C) -28 D) -32

Answer: C

438) x^2 - 4x; x = -10

A) 60 B) -60 C) -140 D) 140

Answer: D

Provide an appropriate response.

439) Use the commutative property of addition to write an equivalent algebraic expression: 8(x + 2).

A) 8(2 + x) B) 2(x + 8) C) 8(x + 2) D) (x + 2)8

Answer: A

440) Use the associative property of multiplication to rewrite -2(4x). Then simplify the expression.

A) (-2 • 4)x = -8 B) (-2 • 4) + x = -8 + x C) (-2 • 4)x = 8x D) (-2 • 4)x = -8x

Answer: D

441) Use the distributive property to rewrite without parentheses: 10(7x - 1 + 8y)

A) 70x - 10 + 8y B) 70x - 10y + 80 C) 70x + 10 + 80y D) 70x - 10 + 80y

Answer: D

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Solve.

442) What is the difference in elevation between a plane flying 17,500 feet above sea level and a submarine traveling 560 feet below sea level?

A) 18,000 feet B) 16,940 feet C) 18,060 feet D) 16,960 feet

Answer: C

Determine whether the given number is a solution of the equation.

443) $\frac{1}{3}(x + 2) = \frac{1}{18}x + \frac{2}{3}$; -8

A) not a solution B) solution

Answer: A

444) $4(x + 5) - 11 = 5x$; 9

A) solution B) not a solution

Answer: A

Translate from English to an algebraic expression or equation, whichever is appropriate. Let the variable x represent the number.

445) $\frac{1}{6}$ of a number, decreased by 8, is 26.

A) $\frac{1}{6}x + 8 = 26$ B) $\frac{1}{6}x = 8 + 26$ C) $\frac{1}{6}x - 8 = 26$ D) $\frac{1}{6}x + 34$

Answer: C

446) Eight subtracted from the product of 8 and 5 less than a number

A) $8(5 - x) - 8$ B) $8(x + 5) - 8$ C) $8(x - 5) - 8$ D) $8(x - 5) = 8$

Answer: C

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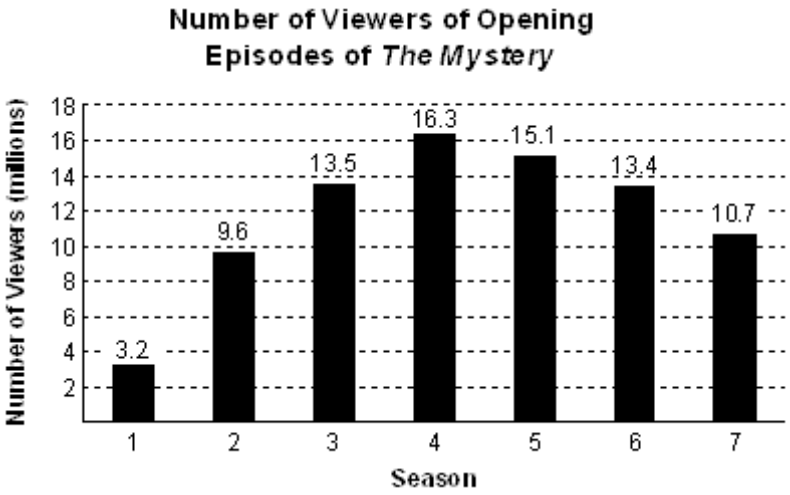
Solve.

447) The Mystery TV show demonstrated just how complex and involving TV storytelling could be. The bar graph shows the number of viewers in the series opening episodes.

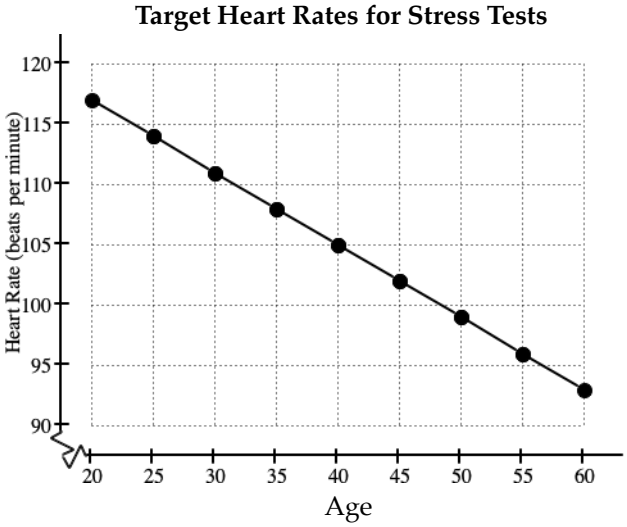


The number of viewers of the opening episodes of The Mystery, V, in millions, can be described by the mathematical model $V = -n^2 + 9n - 5$, where n is the season number. Use the formula to find the number of viewers of the opening episode of season 4. Does the mathematical model underestimate or overestimate the actual number of viewers shown by the bar graph? By how many million?

A) 47 million; overestimates by 63.3 million
B) 23 million; underestimates by 6.7 million
C) 15 million; underestimates by 1.3 million
D) 15 million; overestimates by 1.3 million

Answer: C

448) The line graph shows the target heart rate, in beats per minute, of people of various ages when performing an exercise stress test.



Use the line graph to estimate the target heart rate for a 25-year-old taking the test.

A) 101 beats per minute
B) 96 beats per minute
C) 110 beats per minute
D) 114 beats per minute

Answer: D

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449) The formula $H = \frac{3}{5}(215 - a)$ gives the target heart rate, H, in beats per minute, on a stress test for a person of age

a. Use this formula to find the target heart rate for a 60-year-old.

A) 103 beats per minute
B) 69 beats per minute
C) 88 beats per minute
D) 93 beats per minute

Answer: D

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1) D
2) B
3) B
4) A
5) D
6) B
7) C
8) B
9) C
10) C
11) C
12) A
13) A
14) A
15) B
16) B
17) A
18) B
19) D
20) A
21) A
22) A
23) A
24) A
25) B
26) A
27) B
28) A
29) A
30) A
31) A
32) D
33) D
34) C
35) D
36) B
37) C
38) D
39) C
40) B
41) D
42) C
43) B
44) D
45) D
46) A
47) C
48) B
49) B

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50) A
51) D
52) D
53) A
54) D
55) B
56) C
57) C
58) A
59) B
60) B
61) C
62) A
63) C
64) C
65) B
66) C
67) D
68) C
69) D
70) A
71) C
72) D
73) D
74) A
75) A
76) D
77) C
78) C
79) B
80) C
81) A
82) A
83) C
84) D
85) C
86) B
87) A
88) D
89) B
90) B
91) C
92) C
93) A
94) C
95) D
96) A
97) B
98) A

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99) D
100) B
101) A
102) D
103) C
104) A
105) A
106) A
107) B
108) B
109) C
110) D
111) D
112) C
113) C
114) A
115) B
116) B
117) D
118) A
119) A
120) A
121) A
122) A
123) B
124) B
125) A
126) C
127) B
128) B
129) D
130) C
131) D
132) B
133) D
134) A
135) D
136) B
137) B
138) C
139) A
140) D
141) C
142) D
143) B
144) A
145) D
146) C
147) C

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148) A
149) A
150) B
151) A
152) A
153) A
154) A
155) A
156) B
157) A
158) B
159) B
160) A
161) A
162) B
163) B
164) B
165) A
166) A
167) A
168) C
169) D
170) A
171) A
172) B
173) A
174) B
175) A
176) B
177) C
178) D
179) D
180) B
181) A
182) A
183) D
184) C
185) D
186) D
187) A
188) C
189) B
190) B
191) B
192) D
193) B
194) A
195) C
196) A

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197) D
198) B
199) C
200) C
201) A
202) A
203) A
204) C
205) B
206) B
207) A
208) A
209) C
210) B
211) B
212) A
213) B
214) D
215) D
216) A
217) B
218) A
219) A
220) B
221) A
222) D
223) B
224) D
225) C
226) C
227) C
228) B
229) C
230) C
231) A
232) C
233) D
234) B
235) B
236) D
237) A
238) D
239) A
240) C
241) C
242) B
243) A
244) D
245) C

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246) D
247) A
248) D
249) D
250) B
251) B
252) C
253) A
254) C
255) A
256) A
257) A
258) A
259) D
260) A
261) A
262) B
263) C
264) D
265) D
266) A
267) B
268) C
269) A
270) C
271) A
272) D
273) D
274) A
275) D
276) C
277) C
278) A
279) A
280) A
281) B
282) A
283) A
284) C
285) C
286) B
287) A
288) A
289) A
290) C
291) B
292) D
293) B
294) A

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295) C
296) A
297) D
298) A
299) A
300) A
301) C
302) D
303) C
304) D
305) D
306) B
307) A
308) D
309) D
310) D
311) C
312) C
313) D
314) B
315) A
316) A
317) D
318) D
319) C
320) C
321) C
322) C
323) B
324) C
325) D
326) A
327) D
328) A
329) D
330) C
331) B
332) D
333) C
334) D
335) D
336) B
337) D
338) B
339) C
340) C
341) C
342) D
343) B

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344) C
345) A
346) D
347) C
348) B
349) A
350) D
351) D
352) D
353) C
354) C
355) B
356) B
357) B
358) B
359) A
360) B
361) B
362) A
363) B
364) A
365) B
366) B
367) D
368) B
369) C
370) B
371) D
372) B
373) C
374) B
375) C
376) D
377) D
378) A
379) C
380) B
381) B
382) C
383) B
384) D
385) D
386) B
387) C
388) A
389) D
390) B
391) B
392) D

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393) B
394) C
395) A
396) D
397) A
398) D
399) B
400) B
401) A
402) B
403) D
404) B
405) B
406) D
407) D
408) B
409) D
410) C
411) D
412) A
413) B
414) A
415) D
416) C
417) B
418) B
419) D
420) A
421) D
422) D
423) C
424) D
425) D
426) B
427) A
428) D
429) A
430) D
431) A
432) B
433) D
434) A
435) B
436) B
437) C
438) D
439) A
440) D
441) D

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442) C
443) A
444) A
445) C
446) C
447) C
448) D
449) D

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