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

Name the indicated property.

1) If $x = -5$, then $-5 = x$.
   A) reflexive property
   B) symmetric property
   C) transitive property
   D) multiplication property

   Answer: B

2) If $x = 1$ and $1 = y$, then $x = y$.
   A) symmetric property
   B) multiplication property
   C) reflexive property
   D) transitive property

   Answer: D

3) $5x + 24 = 5x + 24$
   A) reflexive property
   B) addition property
   C) symmetric property
   D) transitive property

   Answer: A

4) If $x = -5$, then $x + 2 = -5 + 2$
   A) reflexive property
   B) transitive property
   C) symmetric property
   D) addition property

   Answer: D

5) If $x + 2 = -7$, then $x + 2 - 2 = -7 - 2$
   A) addition property
   B) symmetric property
   C) reflexive property
   D) transitive property

   Answer: A

6) If $x = 4$, then $x - 4 = 4 - 4$
   A) addition property
   B) symmetric property
   C) reflexive property
   D) transitive property

   Answer: A

7) If $x + 9 = y + 5$, and $y + 5 = z$, then $x + 9 = z$
   A) symmetric property
   B) addition property
   C) transitive property
   D) reflexive property

   Answer: C

8) If $5x = -9$, then $-4(5x) = -4(-9)$
   A) symmetric property
   B) multiplication property
   C) transitive property
   D) reflexive property

   Answer: B

9) $4x = 25$, then $\frac{1}{4}(4x) = \frac{1}{4}(25)$
   A) reflexive property
   B) multiplication property
   C) symmetric property
   D) transitive property

   Answer: B

Give the degree of the term.

10) 5x

A) 0 B) 5 C) 1 D) -1

Answer: C

11) $-7x^4$

A) 28 B) -7 C) -28 D) 4

Answer: D

12) -5xy

A) 0 B) 1 C) -5 D) 2

Answer: D

13) 9

A) -9 B) 9 C) 0 D) 1

Answer: C

14) -9

A) 1 B) -9 C) 0 D) 9

Answer: C

15) $8x^7b^8c^6$

A) 21 B) 14 C) 8 D) 6

Answer: A

16) $4w^8c^2$

A) 4 B) 10 C) 2 D) 14

Answer: B

17) $3xy^3z^5$

A) 3 B) 9 C) 15 D) 8

Answer: B

18) $14x^2y$

A) 3 B) 2 C) 7 D) 14

Answer: A

Simplify the expression. If the expression cannot be simplified, so state.

19) 6a - 3a + 3

A) 3a + 3 B) -3a + 3

C) 9a + 3 D) cannot be simplified

Answer: A

20) -10y - 8x - 2x

A) -10y - 10x B) -20xy C) -10y - 6x D) -10y + 6x

Answer: A

21) $-9y - 4y^2$

A) $-5y$ B) $-13y^2$

C) $-13y$ D) cannot be simplified

Answer: D

22) $-8y + 1 - 4 + 7 + y - 4$

A) $-7y$ B) $-9y$ C) $-9y + 1$ D) $-7y - 1$

Answer: A

23) $-7x^6 - 2x^6$

A) $-9x^6$ B) $-10x^6$ C) $-9x^{12}$ D) $-9x^{36}$

Answer: A

24) $1.5x^4 + 1.3x^4 + 1.5x^4$

A) $5.8x^4$ B) $13x^4$

C) $4.3x^4$ D) cannot be simplified

Answer: C

25) $-14y^8 - 5y^8$

A) $-19y^8$ B) $-19y^{16}$

C) $-9y^8$ D) cannot be simplified

Answer: A

26) $6y + 6 - 3y + 2$

A) $11y$ B) $9y + 8$ C) $3y + 8$ D) $3y + 4$

Answer: C

27) $5.8k - 1.7 - 3.5k + 9 + 2.9k$

A) $12.2k + 7.3$ B) $5.2k + 10.7$ C) $5.2k - 7.3$ D) $5.2k + 7.3$

Answer: D

28) $-5(9r + 6) + 7(8r + 8)$

A) $11r + 26$ B) $11r + 6$ C) $-75r$ D) $4r + 1$

Answer: A

29) $4 + 2(12 - 8m)$

A) $24 - 16m$ B) $28 + 16m$ C) $28 - 16m$ D) $28 - 8m$

Answer: C

30) $9(y + 6) - 4$

A) $15y - 4$ B) $9y + 18$ C) $9y + 50$ D) $9y + 2$

Answer: C

31) $(8z + 3) - (4z - 2)$

A) $4z + 5$ B) $4z - 5$ C) $12z + 5$ D) $4z + 1$

Answer: A

32) $-6(2x - 7) - 4x + 6$

A) $8x + 48$ B) $-16x + 48$ C) $16x + 48$ D) $-16x - 36$

Answer: B

33) $-5[8x^2 + 9(-4 - x)]$

A) $-40x^2 - 45x + 180$ B) $-40x^2 + 5x + 180$ C) $-40x^2 + 45x + 180$ D) $-40x^2 - 9x - 36$

Answer: C

34) $[-10x^2 + (3x^2 + 6)] + [(9x^2 + (9 + 10x^2)) - 2x^2]$

A) $10x^2 + 15$ B) $-16x^2 - 15$ C) $-24x^2 - 3$ D) $-28x^2 - 3$

Answer: A

35) $7\{9y^2 + 4[5y^2 - (y + z^2)]\}$

A) $175y^2 - 28y$ B) $83y^2 - 4y - 4z^2$ C) $203y^2 - 7y + 7z^2$ D) $203y^2 - 28y - 28z^2$

Answer: D

36) $2x^4y^3 + 2(2x^4y^3 - 9x^3y^4)$

A) $6x^4y^3 - 18x^3y^4$ B) $6x^4y^3 - 9x^3y^4$

C) $-12x^7y^7$ D) cannot be simplified

Answer: A

37) $r^2s + 5rs - [-(rs + 6r^2s) + rs]$

A) $12r^3s^2$ B) $6r^2s + 3rs$ C) $-5r^2s + 7rs$ D) $7r^2s + 5rs$

Answer: D

Solve the equation.

38) $2n - 3 = 13$

A) 14 B) 18 C) 9 D) 8

Answer: D

39) $5y - 4 = 1 - 6y$

A) $-\frac{11}{5}$ B) $\frac{11}{5}$ C) $\frac{1}{3}$ D) $\frac{5}{11}$

Answer: D

40) $8x - (6x - 1) = 2$

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

Answer: D

41) $3(x + 2) = 4(x - 7)$

A) -34 B) -22 C) 22 D) 34

Answer: D

42) $4(2x - 3) = 7(x + 2)$

A) 26 B) 2 C) -2 D) 6

Answer: A

43) $7(x + 6) - (6x - 9) = -6$

A) 45 B) 57 C) -57 D) 21

Answer: C

44) $-6x + 2(3x - 5) = -7 - 3x$

A) -1 B) $-\frac{17}{3}$ C) 1 D) $\frac{17}{3}$

Answer: C

45) $8y + 4(4 + y) = 3(y - 1) + 10y$

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

Answer: A

46) $6[-3x - 6 - 5(x + 1)] = 6x - 5$

A) $-\frac{61}{54}$ B) $\frac{11}{54}$ C) $-\frac{61}{3}$ D) $\frac{11}{3}$

Answer: A

47) $2\{5 - [5(k + 2) - 4(k + 2)]\} = -3k$

A) -1 B) -4 C) -6 D) $-\frac{1}{2}$

Answer: C

48) $-\{5(d + 2) - 6[3d - 2(3d + 8)] - 7\} = -18d + 51$

A) $\frac{35}{8}$ B) 35 C) -30 D) $\frac{150}{41}$

Answer: C

49) $\frac{f}{4} - 5 = 1$

A) -24 B) 16 C) -16 D) 24

Answer: D

50) $\frac{1}{5}(a - 1) = -3$

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

Answer: C

51) $\frac{1}{3}(r + 6) = \frac{1}{6}(r + 8)$

A) 4 B) 6 C) 36 D) -4

Answer: D

52) $\frac{2}{5}x - \frac{1}{3}x = 2$

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

Answer: C

53) $\frac{1}{16}b - 10 = -4$

A) -96 B) -98 C) 98 D) 96

Answer: D

54) $\frac{4}{3}(7 - x) = x$

A) $\frac{28}{5}$ B) 7 C) 4 D) -4

Answer: C

55) $\frac{3}{5}(y - 2) = 1 - 3y$

A) $\frac{11}{6}$ B) $\frac{7}{6}$ C) $\frac{11}{18}$ D) $-\frac{11}{18}$

Answer: C

56) $23.9 = -22.4 - n$

A) 46.3 B) -1.5 C) -46.3 D) 1.5

Answer: C

57) $1.1x + 4.1 = 0.3x + 0.74$

A) 0.238 B) -4.158 C) -4.19 D) -4.2

Answer: D

58) $0.80x - 0.40(40 + x) = 0.20(40)$

A) 70 B) 30 C) 60 D) 50

Answer: C

59) $-0.05y + 0.13(1000 - y) = 0.07y$

A) 520 B) 1040 C) 325 D) 32.5

Answer: A

60) $0.4(11x - 6000) = -0.6(20x + 4000) + 19.3x$

A) 1 B) -827.59 C) 0.34482759 D) 0

Answer: D

Indicate whether the equation is conditional, an identity, or a contradiction.

61) $4(2x - 6) = 8x - 24$

A) conditional B) contradiction C) identity

Answer: C

62) $2x = 2x$

A) conditional B) contradiction C) identity

Answer: C

63) $6x + 18 = 6(x + 3) + 8$

A) contradiction B) conditional C) identity

Answer: A

64) $2x + 6x = 7x$

A) identity B) conditional C) contradiction

Answer: B

Solve the problem.

65) A solution is being heated in a controlled lab environment. The temperature of the solution is estimated by the equation $T = 2x + 7$ where T is the temperature of the solution and x is the time in minutes starting with when the solution was subjected to the heat. What will be the temperature of the solution when $x = 5$ minutes?

A) 3 B) 17 C) 9 D) 45

Answer: B

66) The average price (in dollars) to rent a studio in a certain city can be approximated by the equation $p = 35.9t + 599$ where t is the number of years since 1990. Solve this equation for t and use the new equation to determine approximately what year it will be when the average price of a studio in this city reaches $1532.40.

A) 2018 B) 2016 C) 2019 D) 2017

Answer: B

Solve the equation for the specified symbol.

67) $V = \frac{B\odot}{q}$ for $\odot$

A) $\odot = \frac{qB}{V}$ B) $\odot = \frac{V}{qB}$ C) $\odot = \frac{qV}{B}$ D) $\odot = \frac{B}{qV}$

Answer: C

68) $\triangle = \frac{\varrho(\odot)}{\alpha} + \square$ for $\odot$

A) $\odot = \frac{\alpha}{\triangle - \square}$ B) $\odot = \frac{\varrho(\triangle - \square)}{\alpha}$ C) $\odot = \frac{\triangle - \square}{\varrho}$ D) $\odot = \frac{\alpha(\triangle - \square)}{\varrho}$

Answer: D

Solve the problem.

69) Mr. Brown just fenced in an area for his dog. He used exactly 40 feet of fencing for the rectangular shaped enclosure. If the length of the enclosure is 14 feet, what is its width? The formula for the perimeter of a rectangle is $P = 2l + 2w$.

A) 6 ft B) 34 ft C) $2\frac{6}{7}$ ft D) 12 ft

Answer: A

70) Josh makes a $2500, 4% simple interest personal loan to his friend Sean for a period of 7 years. When Sean settles his loan at the end of the 7 years, how much money, in total, must he pay Josh? The formula for simple interest is $I = prt$.

A) $700 B) $72,500 C) $2528 D) $3200

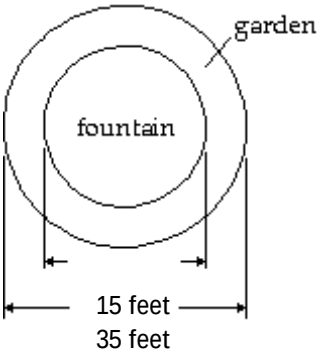
Answer: D

71) A family is preparing an area in their yard for playground equipment. They have marked an area that is 15 feet by 24 feet. They want to fill the area with wood chips to a depth of 6 inches. Find the volume of wood chips required in cubic feet.

A) 2160 cubic ft B) 90 cubic ft C) 180 cubic ft D) 720 cubic ft

Answer: C

72) In Little City Park there is a circular fountain. The park district has decided to plant a circular garden around the fountain. In order to purchase the appropriate number of plants, they must determine the area of the garden in square feet. Find the area rounded to two decimal places, if necessary. The formula for the area of a circle is $A = \pi r^2$. Use 3.14 as an approximation for π.



A) 1570 sq ft B) 3140 sq ft C) 785 sq ft D) 2464.9 sq ft

Answer: C

73) Find the total cost of tiling a rectangular floor that is 5 meters long and 10 meters wide if it costs $8.96 to tile one square meter. Round to the nearest cent. The formula for the area of a rectangle is A = lw.

A) $50.00 B) $268.80 C) $134.40 D) $448.00

Answer: D

74) A canvas for a mural is in the shape of a right triangle. Before the mural can be painted, the canvas must be varnished. The base of the mural is 3 meters and the height of the mural is 11 meters. How many cans of varnish will you need if each can covers 10 square meters? The formula for the area of a right triangle is $A = \frac{1}{2}bh$.

A) 17 cans of varnish B) 2 cans of varnish C) 4 cans of varnish D) 7 cans of varnish

Answer: B

75) Find the amount in a savings account at the end of 4 years if the amount originally deposited (the principal) is $5000 and the interest rate is 6.5% compounded quarterly.

The formula for the final amount is $A = P\left(1 + \frac{r}{n}\right)^{nt}$.

A) $6471.11 B) $5333.01 C) $7118.22 D) $81,300.00

Answer: A

Evaluate the formula for the values given.

76) P = 2L + 2W when L = 3 and W = 5

A) P = 11 B) P = 30 C) P = 8 D) P = 16

Answer: D

77) $A = \frac{1}{2}bh$ when b = 8 and h = 6

A) A = 14 B) A = 48 C) $A = 14\frac{1}{2}$ D) A = 24

Answer: D

78) $d = rt$ when $r = 9$ and $t = 9$

A) $d = 90$ B) $d = 81$ C) $d = 0.1$ D) $d = 72$

Answer: B

79) $L = \frac{P - 2W}{2}$ when $P = 20$ and $W = 3$

A) $L = 8.5$ B) $L = 10$ C) $L = 7$ D) $L = 17$

Answer: C

80) $B = \frac{3V}{h}$ when $V = 12$ and $h = 6$

A) $B = 72$ B) $B = 2$ C) $B = 6$ D) $B = 18$

Answer: C

81) $t = \frac{I}{pr}$ when $I = 72.80$, $p = 260.00$, and $r = 0.04$

A) $t = 7.5712$ B) $t = 0.7$ C) $t = 757.12$ D) $t = 7$

Answer: D

82) $h = \frac{2A}{b + B}$ when $A = 60$, $b = 12$, and $B = 18$

A) $h = 216$ B) $h = 15$ C) $h = 4$ D) $h = 45$

Answer: C

Solve the equation for y.

83) $x = 5y + 3$

A) $y = x - \frac{3}{5}$ B) $y = 5x - 3$ C) $y = \frac{1}{5}x - 3$ D) $y = \frac{1}{5}x - \frac{3}{5}$

Answer: D

84) $3x - 5y = 1$

A) $y = \frac{3}{5}x - \frac{1}{5}$ B) $y = \frac{3}{5}x + \frac{1}{5}$ C) $y = 3x - 1$ D) $y = \frac{5}{3}x + \frac{1}{3}$

Answer: A

85) $3x + 2y = 13$

A) $y = -\frac{3}{2}x + \frac{13}{2}$ B) $y = 3x - 13$ C) $y = \frac{3}{2}x - \frac{13}{2}$ D) $y = \frac{3}{2}x + \frac{13}{2}$

Answer: A

86) $3x + 5y = 9x + 4$

A) $y = \frac{12}{5}x + \frac{4}{5}$ B) $y = \frac{6}{5}x + \frac{4}{5}$ C) $y = 6x + 12$ D) $y = \frac{5}{6}x - \frac{4}{6}$

Answer: B

Solve the equation for the indicated variable.

87) $A = \frac{1}{2}bh$, for b

A) $b = \frac{A}{2h}$ B) $b = \frac{Ah}{2}$ C) $b = \frac{2A}{h}$ D) $b = \frac{h}{2A}$

Answer: C

88) $S = 2\pi rh + 2\pi r^2$, for h

A) $h = \frac{S}{2\pi r} - 1$ B) $h = 2\pi(S - r)$ C) $h = S - r$ D) $h = \frac{S - 2\pi r^2}{2\pi r}$

Answer: D

89) $V = \frac{1}{3}Bh$, for h

A) $h = \frac{3B}{V}$ B) $h = \frac{V}{3B}$ C) $h = \frac{3V}{B}$ D) $h = \frac{B}{3V}$

Answer: C

90) $P = S_1 + S_2 + S_3$, for S_3

A) $S_3 = S_1 + S_2 - P$ B) $S_3 = P - S_1 - S_2$ C) $S_3 = S_1 + P - S_2$ D) $S_3 = P + S_1 + S_2$

Answer: B

91) $F = \frac{9}{5}C + 32$, for C

A) $C = \frac{5}{F - 32}$ B) $C = \frac{5}{9}(F - 32)$ C) $C = \frac{F - 32}{9}$ D) $C = \frac{9}{5}(F - 32)$

Answer: B

92) $d = rt$, for r

A) $r = \frac{d}{t}$ B) $r = d - t$ C) $r = \frac{t}{d}$ D) $r = dt$

Answer: A

93) $P = 2L + 2W$, for W

A) $W = P - L$ B) $W = \frac{P - 2L}{2}$ C) $W = P - 2L$ D) $W = \frac{P - L}{2}$

Answer: B

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

94) The sum of 52 and a number

A) $52 + x$ B) 52 C) $52x$ D) $52 - x$

Answer: A

95) A number increased by 111

A) $111x$ B) $x - 111$ C) $x + 111$ D) 111

Answer: C

96) 63 less than a number

A) x - 63 B) 63x C) 63 - x D) x + 63

Answer: A

97) The quotient of a number and 31

A) 31x B) $\frac{31}{x}$ C) 31 - x D) $\frac{x}{31}$

Answer: D

98) 18 less than the product of 10 and a number

A) 18 - 10x B) 10x - 18 C) 10 + x - 18 D) $\frac{x}{10}$ - 18

Answer: B

99) The sum of twice a number and 37

A) 2(x + 37) B) 2x + 37 C) 74 + x D) 2 + x + 37

Answer: B

100) Twice the sum of a number and 44

A) 88 + x B) 44(x + 2) C) 2(x + 44) D) 2x + 44

Answer: C

101) Seven times the difference of a number and 20

A) 7(x - 20) B) 7x - 20 C) 7(20 - x) D) $\frac{x - 20}{7}$

Answer: A

Write a mathematical expression for the situation described.

102) Two numbers have a sum of 56. If one number is q, express the other number in terms of q.

A) q + 56 B) 56 - 2q C) q - 56 D) 56 - q

Answer: D

103) A 33-centimeter piece of rope is cut into two pieces. If one piece is z centimeters long, express the other length as an algebraic expression in z.

A) (z + 33) cm B) (33 - 2z) cm C) (z - 33) cm D) (33 - z) cm

Answer: D

104) In the race for Student Body President, Jose received 170 more votes than Angela. If Angela received x votes, how many votes did Jose receive?

A) (170x) votes B) (170 - x) votes C) (x - 170) votes D) (x + 170) votes

Answer: D

105) During a walk-a-thon, Rosilyn walked 6 fewer laps than June walked. If June walked b laps, how many laps did Rosilyn walk?

A) $\left(\frac{b}{6}\right)$ laps B) (b - 6) laps C) (6 - b) laps D) (b + 6) laps

Answer: B

106) Suppose the regular price of a car is c dollars. Write a mathematical expression for the following: "I'll give you one-seventh off regular price."

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

Answer: A

107) Suppose Ella is x years of age. Write a mathematical expression for the following: "Ella's mother is three times the sum of Ella's age and 10.

A) x + 30 B) 3x + 10 C) 3x - 10 D) 3(x + 10)

Answer: D

Solve the problem.

108) Angles A and B are complementary angles. Determine the measures of angles A and B if angle B is 2 less than three times the size of angle A.

A) A = 22°; B = 68° B) A = 31°; B = 59° C) A = 23°; B = 67° D) A = 22°; B = 64°

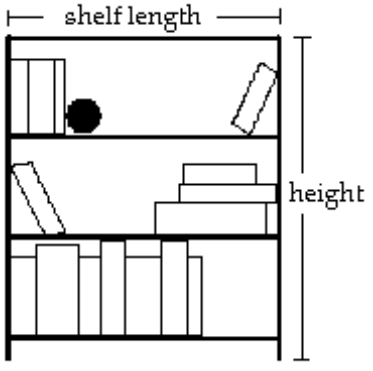
Answer: C

109) The sum of the angles of a triangle is 180°. Find the three angles of the triangle if one angle is twice the smallest angle and the third angle is 12° greater than the smallest angle.

A) 36°, 72°, 72° B) 36°, 48°, 96° C) 42°, 84°, 54° D) 34°, 68°, 78°

Answer: C

110) A bookcase is to be constructed as shown in the figure below. The height of the bookcase is 3 feet longer than the length of a shelf. If 18 feet of lumber is available for the entire unit (including the shelves, but NOT the back of the bookcase), find the length and height of the unit.



A) length = 7.5 ft; height = 9 ft B) length = 3 ft; height = 6 ft
C) length = 2 ft; height = 5 ft D) length = 2 ft; height = 6 ft

Answer: C

111) An auto repair shop charged a customer $417 to repair a car. The bill listed $67 for parts and the remainder for labor. If the cost of labor is $50 per hour, how many hours of labor did it take to repair the car?

A) 6 hr B) 7.5 hr C) 8 hr D) 7 hr

Answer: D

112) After a 13% price reduction, a boat sold for $26,970. What was the boat's price before the reduction? (Round to the nearest cent, if necessary.)

A) $30,476.10 B) $3506.10 C) $207,461.54 D) $31,000

Answer: D

113) Inclusive of a 6.3% sales tax, a diamond ring sold for $1700.80. Find the price of the ring before the tax was added. (Round to the nearest cent, if necessary.)

A) $107.15 B) $1807.95 C) $1600 D) $1593.65

Answer: C

114) A 9-ft. board is cut into 2 pieces so that one piece is 5 feet longer than 3 times the shorter piece. If the shorter piece is x feet long, find the lengths of both pieces.

A) shorter piece: 1 ft; longer piece: 8 ft
B) shorter piece: 4.5 ft; longer piece: 27 ft
C) shorter piece: 15 ft; longer piece: 32 ft
D) shorter piece: 22 ft; longer piece: 27 ft

Answer: A

115) The president of a certain university makes three times as much money as one of the department heads. If the total of their salaries is $190,000, find each worker's salary.

A) president's salary = $47,500; department head's salary = $142,500
B) president's salary = $142,500; department head's salary = $47,500
C) president's salary = $95,000; department head's salary = $47,500
D) president's salary = $14,250; department head's salary = $4750

Answer: B

116) The population of a town increased by 20% in 5 years. If the population is currently 36,000, find the population of this town 5 years ago. (Round to the nearest whole, if necessary.)

A) 7200 B) 180,000 C) 28,800 D) 30,000

Answer: D

117) The three most prominent buildings in a city, Washington Center, Lincoln Galleria, and Jefferson Square Tower, have a total height of 1800 feet. Find the height of each building if Jefferson Square Tower is twice as tall as Lincoln Galleria and Washington Center is 240 feet taller than Lincoln Galleria.

A) Washington Center: 680 ft
Lincoln Galleria: 170 ft
Jefferson Square Tower: 950 ft

B) Washington Center: 400 ft
Lincoln Galleria: 100 ft
Jefferson Square Tower: 1300 ft

C) Washington Center: 500 ft
Lincoln Galleria: 260 ft
Jefferson Square Tower: 1040 ft

D) Washington Center: 340 ft
Lincoln Galleria: 100 ft
Jefferson Square Tower: 1360 ft

Answer: C

118) In a recent International Gymnastics competition, the U.S., China, and Romania were the big winners. If the total number of medals won by each team are three consecutive integers whose sum is 39 and the U.S. won more than China who won more than Romania, how many medals did each team win?

A) U.S.: 14 medals; China: 13 medals; Romania: 12 medals
B) U.S.: 12 medals; China: 11 medals; Romania: 10 medals
C) U.S.: 15 medals; China: 14 medals; Romania: 13 medals
D) U.S.: 41 medals; China: 40 medals; Romania: 39 medals

Answer: A

119) Stephanie is a waitress and she is paid $2.96 per hour plus 15% of the total cost of the food and beverages she serves. If during a 7-hour shift she earns $200, what was the total cost of the food and beverages she served?

A) $210.92 B) $1195.20 C) $155.90 D) $1471.47

Answer: B

120) Morgan goes out to lunch and only has $15. If she must pay 5% sales tax and wants to leave a 12% tip on the total bill (meal plus tax), what is the maximum price of the lunch she can order?

A) $16.60 B) $12.76 C) $14.10 D) -$2.06

Answer: B

121) Two cars start from the same point and travel in the same direction. If one car is traveling 55 miles per hour and the other car is traveling at 50 miles per hour, how far apart will they be after 6.3 hours?

A) 315 miles B) 346.5 miles C) 31.5 miles D) 661.5 miles

Answer: C

122) Two trains leave a train station at the same time. One travels east at 11 miles per hour. The other train travels west at 7 miles per hour. In how many hours will the two trains be 34.2 miles apart?

A) 2.4 hours B) 1.9 hours C) 1 hours D) 3.8 hours

Answer: B

123) Ken and Kara are 34 miles apart on a calm lake paddling toward each other. Ken paddles at 3 miles per hour, while Kara paddles at 6 miles per hour. How long will it take them to meet?

A) $3\frac{7}{9}$ hours B) 25 hours C) $4\frac{1}{6}$ hours D) $11\frac{1}{3}$ hours

Answer: A

124) A freight train leaves a station traveling at 32 km/h. Two hours later, a passenger train leaves the same station traveling in the same direction at 52 km/h. How long does it takes the passenger train to catch up to the freight train?

A) 4.2 hours B) 3.2 hours C) 5.2 hours D) 2.2 hours

Answer: B

125) Five friends drove at an average rate of 60 miles per hour to a weekend retreat. On the way home, they took the same route but averaged 65 miles per hour. What was the distance between home and the retreat if the round trip took 10 hours?

A) 624 miles B) 312 miles C) 7800 miles D) $5\frac{1}{5}$ miles

Answer: B

126) Gary can hike on level ground 3 miles an hour faster than he can on uphill terrain. Yesterday, he hiked 28 miles, spending 2 hours on level ground and 5 hours on uphill terrain. Find his average speed on level ground.

A) $6\frac{4}{7}$ mph B) 4 mph C) $3\frac{1}{7}$ mph D) $6\frac{1}{7}$ mph

Answer: D

127) During a hurricane evacuation from the east coast of Georgia, a family traveled 230 miles west. For part of the trip, they averaged 50 mph, but as the congestion got bad, they had to slow to 10 mph. If the total time of travel was 7 hours, how many miles did they drive at the reduced speed?

A) 40 miles B) 30 miles C) 35 miles D) 25 miles

Answer: B

128) Richard works for a company that pays $28 per hour for the first forty hours and $42 per hour for each hour in the week worked above the 40 hours. If he earned $1834 this week, how many overtime hours did he work?

A) 16 hours B) 25.5 hours C) 17 hours D) 57 hours

Answer: C

129) Jamie sells handcrafted dolls at local art fairs. She sells small dolls for $30 and large dolls for $60. At the end of the Little Town Art Fair, she determined that the total amount she made by selling 16 dolls was $660. Determine the number of small and the number of large dolls that she sold.

A) 7 small, 9 large B) 9 small, 7 large C) 10 small, 6 large D) 6 small, 10 large

Answer: C

130) Kevin invested part of his $10,000 bonus in a certificate of deposit that paid 6% annual simple interest, and the remainder in a mutual fund that paid 11% annual simple interest. If his total interest for that year was $700, how much did Kevin invest in the mutual fund?

A) $8000 B) $3000 C) $1000 D) $2000

Answer: D

131) How much pure acid should be mixed with 8 gallons of a 50% acid solution in order to get an 80% acid solution?

A) 20 gal B) 12 gal C) 4 gal D) 32 gal

Answer: B

132) The owners of a candy store want to sell, for $6 per pound, a mixture of chocolate-covered raisins, which usually sells for $3 per pound, and chocolate-covered macadamia nuts, which usually sells for $8 per pound. They have a 40-pound barrel of the raisins. How many pounds of the nuts should they mix with the barrel of raisins so that they hit their target value of $6 per pound for the mixture?

A) 56 lb B) 52 lb C) 64 lb D) 60 lb

Answer: D

133) The manager of a coffee shop has one type of coffee that sells for $10 per pound and another type that sells for $13 per pound. The manager wishes to mix 30 pounds of the $13 coffee to get a mixture that will sell for $12 per pound. How many pounds of the $10 coffee should be used?

A) 15 lb B) 7.5 lb C) 22.5 lb D) 45 lb

Answer: A

134) A chemist needs 180 milliliters of a 35% solution but has only 23% and 59% solutions available. Find how many milliliters of each that should be mixed to get the desired solution.

A) 60 ml of 23%; 120 ml of 59% B) 50 ml of 23%; 130 ml of 59%
C) 130 ml of 23%; 50 ml of 59% D) 120 ml of 23%; 60 ml of 59%

Answer: D

135) A chemist needs 9 liters of a 50% salt solution. All she has available is a 20% salt solution and a 70% salt solution. How much of each of the two solutions should she mix to obtain her desired solution?

A) 4.5 L of 20%; 4.5 L of 70% B) 3.6 L of 20% ; 5.4 L of 70%
C) 1.8 L of 20%; 7.2 L of 70% D) 2.7 L of 20%; 6.3 L of 70%

Answer: B

136) A beverage wholesaler wants to create a new punch. He will mix fruit juice worth $5 a gallon and rum worth $10 a gallon. He wants to obtain 125 gallons of punch worth $7 a gallon. How much of each beverage should he use?

A) 100 gal of juice; 25 gal of rum B) 112.5 gal of juice; 12.5 gal of rum
C) 75 gal of juice; 50 gal of rum D) 87.5 gal of juice; 37.5 gal of rum

Answer: C

137) Max needs to drain his 12,000 gallon inground pool to put in a new liner. He has a pump that will drain 14 gallons per minute and the main pump will drain 26 gallons per minute. If both pumps are turned on at the same time and run until the pool is empty, how long will it take for the pool to be drained?

A) 5 minutes

B) 40 minutes = $14\frac{2}{7}$ hours

C) $461\frac{7}{13}$ minutes = $7\frac{9}{13}$ hours

D) 300 minutes = 5 hours

Answer: D

138) Chelsea works two part time jobs. One job pays $6.75 per hour and the other pays $9.50 per hour. Last week Chelsea worked for 23 hours and earned $193.75. How many hours did she work at each job.

A) 9 hours at $6.75 per hour and 14 hours at $9.50 per hour

B) 11 hours at $6.75 per hour and 12 hours at $9.50 per hour

C) 14 hours at $6.75 per hour and 9 hours at $9.50 per hour

D) 11.9 hours at $6.75 per hour and 11.1 hours at $9.50 per hour

Answer: A

Solve the inequality.

139) $a + 4 < 7$

A) $a > 11$ B) $a > 3$ C) $a < 11$ D) $a < 3$

Answer: D

140) $4x + 7 < 43$

A) $x > 9$ B) $x < 9$ C) $x < 7$ D) $x > 7$

Answer: B

141) $5z + 6 > 4z + 13$

A) $z < 7$ B) $z < 19$ C) $z > 19$ D) $z > 7$

Answer: D

142) $8c - 7 \leq 7c - 8$

A) $c < -1$ B) $c \geq -15$ C) $c \geq -1$ D) $c \leq -1$

Answer: D

143) $-11 - 10x - 11 \geq -11x - 12$

A) $x \geq 10$ B) $x > -10$ C) $x < -10$ D) $x \leq 10$

Answer: A

144) $8 - 2(3 - x) \leq 12$

A) $x \leq 5$ B) $x < 5$ C) $x \geq 5$ D) $x \leq 6$

Answer: A

145) $-15x - 9 \leq -3(4x - 2)$

A) $x \geq -5$ B) $x \leq -5$ C) $x < -5$ D) $x > -5$

Answer: A

Solve the problem.

146) Shaundra has $3.65 to make a long distance call at a pay phone.The rates listed on the phone for a long distance call are $2.25 for the first three minutes and $0.35 for each additional minute or portion of a minute. Find the maximum number of minutes Shaundra can stay on the line.

A) 2 minutes B) 4 minutes C) 7 minutes D) 10 minutes

Answer: C

147) Michael scored 68, 88, and 91 on three algebra tests. What must he score on the fourth test in order to have an average grade of at least 85?

A) 62 B) 29 C) 93 D) 82

Answer: C

148) Greg is opening a car wash. He estimates his cost equation as C = 8000 + 0.08x and his revenue equation as R = 1.7x, where x is the number of cars washed in a six month period. Find the minimum number of cars that need to be washed in a six month period to make a profit.

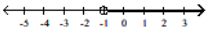
A) 4939 cars B) 3939 cars C) 49,383 cars D) 494 cars

Answer: A

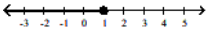
Solve the inequality and graph the solution on the number line.

149) a + 1 < 0

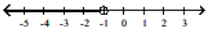
A)



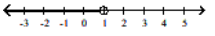
B)



C)



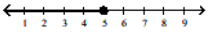
D)



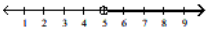
Answer: C

150) 3x + 7 < 22

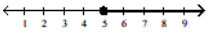
A)



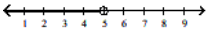
B)



C)



D)

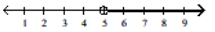


Answer: D

151) $5z + 1 > 4z + 4$

A)

B)



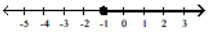
C)

D)

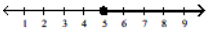
Answer: A

152) $3c + 3 \leq 2c + 2$

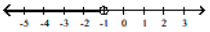
A)



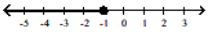
B)



C)



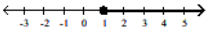
D)



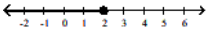
Answer: D

153) $6 - 2(2 - x) \leq 4$

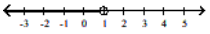
A)



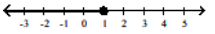
B)



C)



D)

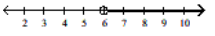


Answer: D

154) $-25r - 20 \leq -5(4r + 10)$

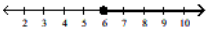
A)

B)



C)

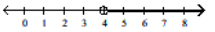
D)

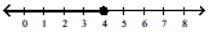


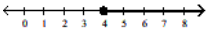
Answer: D

155) $\frac{x}{2} \geq 1 + \frac{x}{4}$

A) 

B) 

C) 

D) 

Answer: D

Solve the inequality and give the solution in interval notation.

156) $a - 6 < -7$

A) $(-\infty, -1)$ B) $(-\infty, -13]$ C) $(-\infty, -13)$ D) $(-1, \infty)$

Answer: A

157) $4x + 10 < 42$

A) $(-\infty, 8]$ B) $[8, \infty)$ C) $(8, \infty)$ D) $(-\infty, 8)$

Answer: D

158) $3z + 2 > 2z + 8$

A) $(6, \infty)$ B) $(-\infty, 6]$ C) $[6, \infty)$ D) $(10, \infty)$

Answer: A

159) $-6c - 1 \leq -7c - 3$

A) $(-\infty, -2]$ B) $[-4, \infty)$ C) $(-\infty, -2)$ D) $[-2, \infty)$

Answer: A

160) $5 - 3(1 - x) \leq 11$

A) $[3, \infty)$ B) $(-\infty, 3)$ C) $(-\infty, 4]$ D) $(-\infty, 3]$

Answer: D

161) $-30r + 15 \leq -5(5r + 1)$

A) $[4, \infty)$ B) $(4, \infty)$ C) $(-\infty, 4]$ D) $(-\infty, 4)$

Answer: A

162) $\frac{x}{2} \geq 2 + \frac{x}{6}$

A) $[-6, \infty)$ B) $[6, \infty)$ C) $(6, \infty)$ D) $(-\infty, 6]$

Answer: B

163) $\frac{x - 5}{24} \geq \frac{x - 3}{30} + \frac{1}{120}$

A) $(14, \infty)$ B) $[14, \infty)$ C) $(-\infty, 14]$ D) $(-\infty, 14)$

Answer: B

Find the solution set for the inequality.

164) $a - 3 < -6$

A) $\{a \mid a > -9\}$ B) $\{a \mid a < -3\}$ C) $\{a \mid a > -3\}$ D) $\{a \mid a < -9\}$

Answer: B

165) $4x + 7 < 39$

A) $\{x \mid x > 8\}$ B) $\{x \mid x < 8\}$ C) $\{x \mid x < 7\}$ D) $\{x \mid x > 7\}$

Answer: B

166) $5z - 5 > 4z - 9$

A) $\{z \mid z < -14\}$ B) $\{z \mid z > -14\}$ C) $\{z \mid z < -4\}$ D) $\{z \mid z > -4\}$

Answer: D

167) $-2c + 6 \leq -3c + 7$

A) $\{c \mid c \geq 1\}$ B) $\{c \mid c \leq 1\}$ C) $\{c \mid c < 1\}$ D) $\{c \mid c \geq 13\}$

Answer: B

168) $-3 - 10x - 8 \geq -11x - 1$

A) $\{x \mid x > -10\}$ B) $\{x \mid x < -10\}$ C) $\{x \mid x \leq 10\}$ D) $\{x \mid x \geq 10\}$

Answer: D

169) $6 - 2(2 - x) \leq -8$

A) $\{x \mid x \leq -5\}$ B) $\{x \mid x \leq -4\}$ C) $\{x \mid x \geq -5\}$ D) $\{x \mid x < -5\}$

Answer: A

170) $-24x + 24 \leq -6(3x - 8)$

A) $\{x \mid x \geq -4\}$ B) $\{x \mid x > -4\}$ C) $\{x \mid x \leq -4\}$ D) $\{x \mid x < -4\}$

Answer: A

171) $\frac{7}{9}(x + 5) > \frac{2}{3}(x + 4)$

A) $\{x \mid x < -11\}$ B) $\{x \mid x > -11\}$ C) $\{x \mid x > 11\}$ D) $\{x \mid x < 11\}$

Answer: B

172) $\frac{x + 1}{5} - \frac{1}{8} > \frac{x + 1}{8}$

A) $\{x \mid x > \frac{2}{3}\}$ B) $\{x \mid x > 6\}$ C) $\{x \mid x < \frac{2}{3}\}$ D) $\{x \mid x < -\frac{8}{13}\}$

Answer: A

Solve the inequality and give the solution in interval notation.

173) $-2 < x + 1 \leq 6$

A) $(-3, 5]$ B) $[-3, 5)$ C) $[-1, 7)$ D) $(-1, 7]$

Answer: A

174) $6 \leq 2x - 2 \leq 8$

A) $[4, 5]$ B) $(-5, -4)$ C) $(4, 5)$ D) $[-5, -4]$

Answer: A

175) $-15 \le -2x - 5 < -13$

A) $(4, 5]$ B) $[4, 5)$ C) $(-5, -4]$ D) $[-5, -4)$

Answer: A

176) $2 \le \frac{5}{7}x - 3 < 7$

A) $[7, 8)$ B) $(7, 8]$ C) $[7, 14)$ D) $(7, 14]$

Answer: C

177) $7x + 5 \ge 4$ and $9x - 4 < 9$

A) $(-\frac{1}{7}, \frac{13}{9}]$ B) $[-\frac{1}{7}, \frac{13}{9})$ C) $(-\frac{1}{7}, \frac{5}{9}]$ D) $[-\frac{1}{7}, \frac{5}{9})$

Answer: B

Solve the inequality and give the solution set.

178) $0 \le \frac{3x + 4}{2} < 3$

A) $\{x | -\frac{4}{3} < x \le \frac{2}{3}\}$ B) $\{x | -\frac{4}{3} \le x < \frac{2}{3}\}$ C) $\{x | -\frac{4}{3} \le x \le \frac{2}{3}\}$ D) $\{x | -\frac{4}{3} < x < \frac{2}{3}\}$

Answer: B

179) $\frac{1}{3} < \frac{-x - 5}{3} < 7$

A) $\{x | 6 < x < 26\}$ B) $\{x | -26 < x < -6\}$ C) $\{x | -26 < x < -\frac{46}{9}\}$ D) $\{x | -26 < x < -14\}$

Answer: B

180) $-4 < \frac{-3(4 - x)}{5} < \frac{2}{9}$

A) $\{x | -\frac{8}{3} < x < \frac{22}{3}\}$ B) $\{x | -\frac{118}{27} < x < \frac{8}{3}\}$ C) $\{x | -\frac{22}{3} < x < \frac{8}{3}\}$ D) $\{x | -\frac{8}{3} < x < \frac{118}{27}\}$

Answer: D

181) $x \le 4$ and $x \ge -3$

A) $\{x | -3 \le x \le 4\}$ B) $\{x | -3 < x < 4\}$ C) $\{x | x \le -3\}$ D) $\{\ \}$

Answer: A

182) $x \le -2$ and $x \ge 5$

A) $\{x | x \le -2\}$ B) $\{x | -2 \le x \le 5\}$ C) $\{x | -2 < x < 5\}$ D) $\{\ \}$

Answer: D

183) $x - 1 \le 8$ and $x - 1 > -6$

A) $\{x | -5 \le x < 9\}$ B) $\{x | -7 \le x < 7\}$ C) $\{x | -7 < x \le 7\}$ D) $\{x | -5 < x \le 9\}$

Answer: D

Solve the problem.

184) The water acidity in a pool is considered normal when the average pH reading of three daily measurements is greater than 7.2 and less than 7.8. If the first two pH reading are 7.25 and 7.85, find the range of pH values for the third reading that will result in the acidity level being normal.

A) $7.7 < x < 9.5$ B) $6.5 < x < 8.3$ C) $7.2 < x < 7.8$ D) $7.1 < x < 8.9$

Answer: B

185) Ashley's grades on her first 3 exams are 85, 78, and 80. An average greater than or equal to 80 and less than 90 will result in a final grade of B. What range of grades on Ashley's fourth and final exam will result in a final grade of B? The maximum grade is 100.

A) $77 \le x \le 100$ B) $67 \le x \le 90$

C) $77 \le x < 117$ D) Impossible to get a B.

Answer: A

186) A velocity ≥ 0 indicates that the object is traveling upward and a velocity ≤ 0 indicates that the object is traveling downward. An object is projected upward and $v(t) = -9.8t + 68.6$, $0 \le t \le 10$. Determine the interval when the object is traveling upward.

A) [0, 9.8] B) [7, 10] C) [0, 7] D) [0, 6]

Answer: C

187) A velocity ≥ 0 indicates that the object is traveling upward and a velocity ≤ 0 indicates that the object is traveling downward. An object is projected upward and $v(t) = -9t + 55.8$, $0 \le t \le 12$. Determine the interval when the object is traveling downward.

A) [5.2, 9.2] B) [0, 6.2] C) [6.2, 12] D) [6.2, 9]

Answer: C

Find the solution set for the inequality.

188) $x \le 2$ or $x \ge 1$

A) $\{x \mid 1 < x < 2\}$ B) $\{x \mid 1 \le x \le 2\}$ C) $\{x \mid x \le 1 \text{ or } x \ge 2\}$ D) $\mathcal{R}$

Answer: D

189) $x \le -2$ or $x \ge 5$

A) $\{x \mid -2 \le x \le 5\}$ B) $\{x \mid -2 < x < 5\}$ C) $\{x \mid x \le -2 \text{ or } x \ge 5\}$ D) $\mathcal{R}$

Answer: C

190) $6x - 8 \le 16$ or $-x + 7 < -9$

A) $\{x \mid 4 \le x < 16\}$ B) $\{x \mid \frac{4}{3} \le x < 16\}$ C) $\{x \mid x \le \frac{4}{3} \text{ or } x > 16\}$ D) $\{x \mid x \le 4 \text{ or } x > 16\}$

Answer: D

Solve the inequality and give the solution in interval notation.

191) $x + 6 < 8$ or $-6x < -24$

A) $(2, 4)$ B) $(-\infty, \infty)$ C) $(-\infty, 4)$ D) $(-\infty, 2) \cup (4, \infty)$

Answer: D

192) $-5x > 5$ or $x + 5 > 3$

A) $(-2, \infty)$ B) $(-2, -1)$ C) $(-\infty, -2) \cup (-1, \infty)$ D) $(-\infty, \infty)$

Answer: D

193) $9x - 8 > 28$ or $-x + 4 \geq -8$

A) $(-\infty, \infty)$ B) $(4, \infty)$ C) $[4, 12)$ D) $(4, 12]$

Answer: A

Solve the problem.

194) An Algebra class had 5 tests over the course of the semester. The table gives the average and high score for each of the 5 tests.

	Ave.	High
Test 1	73	100
Test 2	82	95
Test 3	69	97
Test 4	74	100
Test 5	68	91

For what tests was the high score greater than 97 or the average greater than 80.

A) Test 1, Test 2, Test 4 B) None

C) Test 1, Test 4 D) Test 1, Test 2, Test 3, Test 4

Answer: A

195) An Algbra class had 5 tests over the course of the semester. The table gives the average and high score for each of the 5 tests.

	Ave.	High
Test 1	75	100
Test 2	84	95
Test 3	69	97
Test 4	76	100
Test 5	68	91

For what tests was the high score less than 96 or the average less than 70.

A) Test 1, Test 4 B) Test 3

C) Test 2, Test 5 D) Test 2, Test 3, Test 5

Answer: D

196) There are no exercises for this objective.

Answer: No Correct Answer Was Provided.

Find the solution set for the equation.

197) $|x| = 3$

A) $\{-3\}$ B) $\{9\}$ C) $\{3\}$ D) $\{-3, 3\}$

Answer: D

198) $|r - 5| = 6$

A) $\{-1, 11\}$ B) $\{1, 11\}$ C) $\{-11\}$ D) $\emptyset$

Answer: A

199) $|t + 3| = 0$

A) $\{3\}$ B) $\{3, -3\}$ C) $\{0\}$ D) $\{-3\}$

Answer: D

200) $|7m + 2| = 6$

A) $\{2, -4\}$ B) $\{-\frac{4}{7}, \frac{8}{7}\}$ C) $\{\frac{4}{7}, -\frac{8}{7}\}$ D) $\emptyset$

Answer: C

201) $|3m + 4| + 6 = 12$

A) $\{-\frac{2}{3}, \frac{10}{3}\}$ B) $\{\frac{1}{2}, -\frac{5}{2}\}$ C) $\{\frac{2}{3}, -\frac{10}{3}\}$ D) $\emptyset$

Answer: C

202) $\left|\frac{11y + 22}{2}\right| = 11$

A) $\{4, 0\}$ B) $\{-4, 0\}$ C) $\{-4, 4\}$ D) $\emptyset$

Answer: B

203) $|3(x + 1) + 6| = 18$

A) $\{-7, 0\}$ B) $\{-9, 3\}$ C) $\{-9, 0\}$ D) $\{-7, 5\}$

Answer: B

204) $3 + \left|\frac{2 - x}{2}\right| = 5$

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

Answer: D

205) $|3(3x + 5)| = 0$

A) $\{-\frac{1}{5}\}$ B) $\{-\frac{5}{9}\}$ C) $\{\frac{5}{3}\}$ D) $\{-\frac{5}{3}\}$

Answer: D

Find the solution set for the inequality.

206) $|x| < 5$

A) $\{x | x > 5 \text{ and } x < -5\}$ B) $\{x | 0 \le x < 5\}$

C) $\{x | x < -5 \text{ or } x > 5\}$ D) $\{x | -5 < x < 5\}$

Answer: D

207) $|r + 6| < 5$

A) $\{r | 1 < r < 11\}$ B) $\{r | -11 < r < -1\}$

C) $\{r | r < -11 \text{ or } r > -1\}$ D) $\{r | r < 1 \text{ or } r > 11\}$

Answer: B

208) $|2m + 3| < 4$

A) $\{m | -\frac{1}{2} < m < \frac{7}{2}\}$ B) $\{m | m < -\frac{7}{2} \text{ or } m > \frac{1}{2}\}$

C) $\{m | m < -\frac{1}{2} \text{ or } m > \frac{7}{2}\}$ D) $\{m | -\frac{7}{2} < m < \frac{1}{2}\}$

Answer: D

209) $|2m + 3| + 5 \le 12$

A) $\{m \mid m \le -2 \text{ or } m \ge 5\}$ B) $\{m \mid -2 \le m \le 5\}$

C) $\{m \mid -5 \le m \le 2\}$ D) $\{m \mid m \le -5 \text{ or } m \ge 2\}$

Answer: C

210) $\left|\frac{5y + 15}{3}\right| < 5$

A) $\{y \mid -6 < y < 0\}$ B) $\{y \mid -6 < y < 6\}$ C) $\{y \mid y < -6 \text{ or } y > 0\}$ D) $\{y \mid 0 < y < 6\}$

Answer: A

211) $|3(x + 1) + 9| \le 15$

A) $\{x \mid -9 \le x \le 1\}$ B) $\{x \mid x \le -7 \text{ or } x \ge 3\}$ C) $\{x \mid x \le -9 \text{ or } x \ge 1\}$ D) $\{x \mid -7 \le x \le 3\}$

Answer: A

212) $5 + \left|\frac{2 - x}{2}\right| < 8$

A) $\{x \mid x < -4 \text{ or } x > 8\}$ B) $\{x \mid -4 < x < 8\}$

C) $\{x \mid -4 < x < 4\}$ D) $\{x \mid -8 < x < 4\}$

Answer: B

Solve the problem.

213) A landscaping company sells 30-pound bags of top soil. The actual weight x of a bag, however, may differ from the advertised weight by as much as 0.75 pound. The actual weight of the bag of topsoil, x, can be described by the inequality $|x - 30| \le 0.75$. Give the solution of the inequality in interval notation.

A) [29.25, 30.75] B) [-29.25, 30.75]

C) $(-\infty, 29.25] \cup [30.75, \infty)$ D) (29.25, 30.75)

Answer: A

214) A landscaping company sells mulch by the cubic yard. They use a tractor with one yard bucket to put the mulch into trucks or trailers. The actual amount x in each scoop, however, may differ from one cubic yard by as much as 0.20 yard. The actual amount x in each scoop, can be described by the inequality $|x - 0.20| \le 1$. What is the largest amount of mulch you might get when purchasing one cubic yard.

A) 1.2 cubic yd B) 0.8 cubic yd C) 1.4 cubic yd D) 1 cubic yd

Answer: A

215) Give the inequality that involves an absolute value that has the solution set $\{x \mid -8 < x < 8\}$.

A) $|x| < 8$ B) $|x| > 8$ C) $|x| > -8$ D) $|x| < -8$

Answer: A

Find the solution set for the inequality.

216) $|x| > 6$

A) $\{x \mid -6 < x < 6\}$ B) $\{x \mid x < -6 \text{ or } x > 6\}$

C) $\{x \mid 0 \le x < 6\}$ D) $\{x \mid x > 6 \text{ and } x < -6\}$

Answer: B

217) $|r - 4| > 3$

A) $\{r \mid r < 1 \text{ or } r > 7\}$ B) $\{r \mid r < -7 \text{ or } r > -1\}$ C) $\{r \mid 1 < r < 7\}$ D) $\{r \mid -7 < r < -1\}$

Answer: A

218) $|4m + 6| > 4$

A) $\{m \mid \frac{1}{2} < m < \frac{5}{2}\}$ B) $\{m \mid -\frac{5}{2} < m < -\frac{1}{2}\}$

C) $\{m \mid m < -\frac{5}{2} \text{ or } m > -\frac{1}{2}\}$ D) $\{m \mid m < \frac{1}{2} \text{ or } m > \frac{5}{2}\}$

Answer: C

219) $|5m + 3| + 4 \geq 9$

A) $\{m \mid m \leq -\frac{2}{5} \text{ or } m \geq \frac{8}{5}\}$ B) $\{m \mid -\frac{2}{5} \leq m \leq \frac{8}{5}\}$

C) $\{m \mid m \leq -\frac{8}{5} \text{ or } m \geq \frac{2}{5}\}$ D) $\{m \mid -\frac{8}{5} \leq m \leq \frac{2}{5}\}$

Answer: C

220) $\left|\frac{11y + 22}{2}\right| > 11$

A) $\{y \mid -4 < y < 0\}$ B) $\{y \mid -4 < y < 4\}$ C) $\{y \mid y < -4 \text{ or } y > 0\}$ D) $\{y \mid y < 0 \text{ or } y > 4\}$

Answer: C

221) $|\ 3(x + 1) + 6\ | \geq 9$

A) $\{x \mid -4 \leq x \leq 2\}$ B) $\{x \mid -6 \leq x \leq 0\}$ C) $\{x \mid x \leq -4 \text{ or } x \geq 2\}$ D) $\{x \mid x \leq -6 \text{ or } x \geq 0\}$

Answer: D

222) $5 + \left|\frac{2 - x}{2}\right| > 8$

A) $\{x \mid x < -4 \text{ or } x > 8\}$ B) $\{x \mid -4 < x < 8\}$

C) $\{x \mid -4 < x < 4\}$ D) $\{x \mid x < -8 \text{ or } x > 4\}$

Answer: A

Solve the problem.

223) Give the inequality that involves an absolute value that has the solution set $\{x \mid x < -6 \text{ or } x > 6\}$.

A) $|x| > -6$ B) $|x| < 6$ C) $|x| > 6$ D) $|x| < -6$

Answer: C

Solve the inequality and give the solution set.

224) $|x| < -2$

A) $\{-2\}$ B) $\{x \mid -2 < x < 2\}$ C) $\mathbb{R}$ D) $\emptyset$

Answer: D

225) $|x| > -7$

A) $\{x \mid -7 < x < 7\}$ B) $\{7\}$ C) $\mathbb{R}$ D) $\emptyset$

Answer: C

226) $|2x - 3| + 2 < -4$

A) $\{x | x < -\frac{3}{2} \text{ or } x > \frac{9}{2}\}$ B) $\{x | -\frac{3}{2} < x < \frac{9}{2}\}$

C) $\mathbb{R}$ D) $\emptyset$

Answer: D

227) $|5x - 7| - 9 > -15$

A) $\{x | \frac{1}{5} < x < \frac{13}{5}\}$ B) $\{x | x < \frac{1}{5} \text{ or } x > \frac{13}{5}\}$

C) $\mathbb{R}$ D) $\emptyset$

Answer: C

228) $|x - 7| \leq 0$

A) $\{-7\}$ B) $\{0\}$ C) $\{7\}$ D) $\{t | -7 \leq x \leq 7\}$

Answer: C

229) $|x - 3| \geq 0$

A) $\{t | -3 \leq x \leq 3\}$ B) $\{3\}$ C) $\{-3\}$ D) $\mathbb{R}$

Answer: D

230) $|x + 1| > 0$

A) $\{x | x < -1 \text{ or } x > -1\}$ B) $\{x | -1 < x < 1\}$

C) $\mathbb{R}$ D) $\emptyset$

Answer: A

231) $|x - 4| < 0$

A) $\{x | x < 4 \text{ or } x > 4\}$ B) $\{x | -4 < x < 4\}$ C) $\mathbb{R}$ D) $\emptyset$

Answer: D

Find the solution set for the inequality.

232) $|5x - 9| \geq 0$

A) $\left\{x | x \leq -\frac{9}{5} \text{ or } x \geq \frac{9}{5}\right\}$ B) $\left\{x | -\frac{9}{5} \leq x \leq \frac{9}{5}\right\}$

C) $\mathbb{R}$ D) $\emptyset$

Answer: C

233) $\left|\frac{3x - 3}{3}\right| < 0$

A) $\{x | -1 \leq x \leq 1\}$ B) $\{x | x \leq -1 \text{ or } x \geq 1\}$

C) $\mathbb{R}$ D) $\emptyset$

Answer: D

Find the solution set for the equation.

234) $|8s + 6| = |s + 3|$

A) $\{\frac{3}{7}, 1\}$ B) $\{-\frac{3}{7}, 1\}$ C) $\{-\frac{3}{7}, -1\}$ D) $\emptyset$

Answer: C

235) $|n + 5| = |6 - n|$

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

Answer: B

236) $|\frac{1}{2}n + 2| = |\frac{3}{4}n - 2|$

A) {16, 12} B) {16, 0} C) {10} D) $\emptyset$

Answer: B