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

Solve for x. Check your answers.

1) $x - 9 = -14$
A) $x = -23$
B) $x = 23$
C) $x = 5$
D) $x = -5$
Answer: D

2) $-7 = x - 4$
A) $x = -11$
B) $x = 3$
C) $x = 11$
D) $x = -3$
Answer: D

3) $x - 6 = 13$
A) $x = -7$
B) $x = 7$
C) $x = 19$
D) $x = -19$
Answer: C

4) $x - 15 = 14$
A) $x = 29$
B) $x = -29$
C) $x = 1$
D) $x = -1$
Answer: A

5) $-5 = x + 16$
A) $x = -11$
B) $x = 21$
C) $x = 11$
D) $x = -21$
Answer: D

6) $x - 19 = -8$
A) $x = -27$
B) $x = -11$
C) $x = 152$
D) $x = 11$
Answer: D

7) $-8 = x + 14$
A) $x = 6$
B) $x = -22$
C) $x = -112$
D) $x = 22$
Answer: B

8) $14 + 6 + x = 20 + 18$

A) $x = -18$
B) $x = 30$
C) $x = 18$
D) $x = 58$

Answer: C

9) $1 - 19 + 5 = 10 + x - 8$

A) $x = -15$
B) $x = 5$
C) $x = -31$
D) $x = 27$

Answer: A

10) $5 - 7 = x + 3$

A) $x = 1$
B) $x = 9$
C) $x = 15$
D) $x = -5$

Answer: D

Find the value of x that satisfies the equation.

11) $4.5 + x = 24$

A) $x = 19$
B) $x = 28$
C) $x = 19.5$
D) $x = 28.5$

Answer: C

12) $8.6 = 22 - x$

A) $x = 30.1$
B) $x = 12.9$
C) $x = 30.6$
D) $x = 13.4$

Answer: D

13) $1.2 + x + 2.9 = 2.3$

A) $x = -1.8$
B) $x = 0.6$
C) $x = 4$
D) $x = 6.4$

Answer: A

14) $-3.7 = 17.4 - x$

A) $x = 21.1$
B) $x = 20.6$
C) $x = 13.7$
D) $x = 13.2$

Answer: A

15) $-2.7 + x = 16.1$

A) $x = 18.8$

B) $x = 18.3$

C) $x = 12.9$

D) $x = 13.4$

Answer: A

16) $\frac{1}{2} + x = 8$

A) $x = \frac{7}{2}$

B) $x = \frac{17}{2}$

C) $x = \frac{15}{2}$

D) $x = 15$

Answer: C

17) $x + \frac{7}{10} = \frac{9}{10}$

A) $x = \frac{8}{5}$

B) $x = \frac{4}{5}$

C) $x = 2$

D) $x = \frac{1}{5}$

Answer: D

18) $x - \frac{1}{6} = \frac{7}{12}$

A) $x = \frac{3}{4}$

B) $x = 5$

C) $x = \frac{5}{12}$

D) $x = \frac{1}{2}$

Answer: A

19) $x + 1\frac{3}{5} = 2\frac{1}{5}$

A) $x = 3$

B) $x = \frac{3}{5}$

C) $x = 2$

D) $x = \frac{19}{5}$

Answer: B

20) $x - \frac{7}{12} = -\frac{1}{3}$

A) $x = \frac{11}{12}$

B) $x = -\frac{1}{4}$

C) $x = -\frac{11}{12}$

D) $x = \frac{1}{4}$

Answer: D

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

A) $x = 0$

B) $x = \frac{1}{2}$

C) $x = \frac{2}{3}$

D) $x = \frac{4}{3}$

Answer: C

Determine if the given solution is correct. If it is not, find the solution.

22) Is –6 the solution to $-10 - 8 = x - 10$?

A) no; $x = -28$

B) yes

C) no; $x = -12$

D) no; $x = -8$

Answer: D

23) Is –6 the solution to $x + 6 = 7 - 7$?

A) no; $x = 20$

B) yes

C) no; $x = 6$

D) no; $x = 8$

Answer: B

24) Is 9 the solution to $-1 + x = 9$?

A) no; $x = 10$
B) no; $x = 8$
C) no; $x = -10$
D) yes

Answer: A

Solve for x. Be sure to reduce your answer. Check your solution.

25) $-\frac{1}{7}x = -6$

A) $x = -13$
B) $x = 42$
C) $x = 0$
D) $x = -14$

Answer: B

26) $-\frac{1}{16}x = 0$

A) $x = 1$
B) $x = 16$
C) $x = -16$
D) $x = 0$

Answer: D

27) $\frac{x}{3} = 13$

A) $x = 16$
B) $x = 4$
C) $x = 39$
D) $x = 15$

Answer: C

28) $-\frac{4}{15}x = -\frac{8}{15}$

A) $x = 2$
B) $x = 10$
C) $x = 11$
D) $x = -4$

Answer: A

29) $4x = -28$

A) $x = -32$
B) $x = 1$
C) $x = -7$
D) $x = 32$

Answer: C

30) $-39.6 = -6.6x$

A) $x = -33$

B) $x = 6$

C) $x = 33$

D) $x = 2$

Answer: B

31) $-2x = -10$

A) $x = -8$

B) $x = 2$

C) $x = 8$

D) $x = 5$

Answer: D

32) $-x = -10$

A) $x = 0$

B) $x = 10$

C) $x = -10$

D) $x = -1$

Answer: B

Find the value of the variable that satisfies the equation.

33) $7x + x = 56$

A) $x = 8$

B) $x = 7$

C) $x = 6$

D) $x = \frac{57}{7}$

Answer: B

34) $-6x + x = -30$

A) $x = -6$

B) $x = 6$

C) $x = -7$

D) $x = 7$

Answer: B

35) $-2x - 15x = -20$

A) $x = \frac{20}{17}$

B) $x = -3$

C) $x = 340$

D) $x = \frac{17}{20}$

Answer: A

36) $9x + 11x = 14$

A) $x = \frac{10}{7}$

B) $x = 280$

C) $x = -6$

D) $x = \frac{7}{10}$

Answer: D

Determine if the given solution is correct. If it is not, find the solution.

37) Is -2 the solution to $-x = 2$

A) no; $x = 2$

B) no; $x = -1$

C) no; $x = 0$

D) yes

Answer: D

38) Is 6 the solution to $17x = 85$

A) no; $x = \frac{1}{5}$

B) yes

C) no; $x = 1445$

D) no; $x = 5$

Answer: D

Find the value of the variable that satisfies the equation.

39) $\frac{x}{6} + 9 = 11$

A) $x = 8$

B) $x = 12$

C) $x = 120$

D) $x = 122$

Answer: B

40) $10x + 10 = 110$

A) $x = 1$

B) $x = 94$

C) $x = 90$

D) $x = 10$

Answer: D

41) $9x - 4 = 86$

A) $x = 85$

B) $x = 10$

C) $x = 81$

D) $x = 13$

Answer: B

42) $50 = 10x - 10$

A) $x = 6$
B) $x = 15$
C) $x = 50$
D) $x = 54$

Answer: A

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

A) $x = -7$
B) $x = 7$
C) $x = 5$
D) $x = -5$

Answer: D

44) $\frac{1}{3}x - 4 = 1$

A) $x = 9$
B) $x = 15$
C) $x = -9$
D) $x = -15$

Answer: B

45) $-4x - 2 = 7 + 9x$

A) $x = 1$
B) $x = -\frac{13}{9}$
C) $x = \frac{13}{9}$
D) $x = -\frac{9}{13}$

Answer: D

46) $5x + 1 = -8 - 3x$

A) $x = -\frac{8}{9}$
B) $x = -\frac{2}{7}$
C) $x = \frac{8}{9}$
D) $x = -\frac{9}{8}$

Answer: D

47) $-7x + 7 + 5x = -3x + 12$

A) $x = 12$

B) $x = 5$

C) $x = -12$

D) $x = -7$

Answer: B

48) $24 - 5x = -1x$

A) $x = -5$

B) $x = 6$

C) $x = -6$

D) $x = 5$

Answer: B

49) $-3x = -13x - 90$

A) $x = -\frac{1}{9}$

B) $x = \frac{45}{8}$

C) $x = 30$

D) $x = -9$

Answer: D

Solve for the variable.

50) $-1(x - 16) = 10$

A) $x = 26$

B) $x = 6$

C) $x = -26$

D) $x = -6$

Answer: B

51) $3(x + 8) = 4(x - 8)$

A) $x = -8$

B) $x = 56$

C) $x = -56$

D) $x = 8$

Answer: B

52) $3(2x - 4) = 5(x + 3)$

A) $x = 6$

B) $x = -3$

C) $x = 27$

D) $x = 3$

Answer: C

53) $-7(x - 1) - (-8x - 8) = -1$

A) $x = 8$

B) $x = -16$

C) $x = 14$

D) $x = 16$

Answer: B

Determine whether the given solution is correct. If it is not, find the solution.

54) Is $\frac{19}{18}$ the solution for $-8x + 10 = -9 + 10x$?

A) No; $x = -\frac{18}{19}$

B) No; $x = 2$

C) No; $x = \frac{18}{19}$

D) Yes

Answer: D

55) Is $\frac{1}{4}$ the solution for $-6x - 4 = 8 - 9x$?

A) No; $x = -\frac{1}{4}$

B) No; $x = 4$

C) No; $x = -\frac{15}{4}$

D) Yes

Answer: B

56) Is 5 the solution for $-6x + 3 + 4x = -3x + 8$?

A) No; $x = 8$

B) No; $x = -3$

C) Yes

D) No; $x = -8$

Answer: C

57) Is 13 the solution for $-7x + 8 + 5x = -3x + 13$?

A) No; $x = -8$

B) No; $x = 5$

C) No; $x = -13$

D) Yes

Answer: B

Solve.

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

A) $x = 8$
B) $x = -12$
C) $x = 12$
D) $x = -8$

Answer: C

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

A) $x = 30$
B) $x = 60$
C) $x = -60$
D) $x = -30$

Answer: A

60) $\frac{1}{4}x - \frac{3}{8}x = 3$

A) $x = 21$
B) $x = -24$
C) $x = -21$
D) $x = 24$

Answer: B

61) $\frac{1}{5}(x + 6) = \frac{1}{7}(x + 8)$

A) $x = -1$
B) $x = -12$
C) $x = 1$
D) $x = 3$

Answer: A

62) $\frac{1}{2}x - \frac{1}{2} = -6$

A) $x = -13$
B) $x = -11$
C) $x = 11$
D) $x = 13$

Answer: B

63) $\frac{5x + 7}{7} + \frac{8}{7} = -\frac{2x}{7}$

A) $x = -5$

B) $x = -\frac{1}{7}$

C) $x = \frac{1}{7}$

D) $x = -\frac{15}{7}$

Answer: D

64) $-\frac{1}{5}(x + 10) - \frac{1}{2}(x - 2) = x + 4$

A) $x = -\frac{50}{17}$

B) $x = -\frac{30}{17}$

C) $x = -\frac{10}{17}$

D) $x = -\frac{70}{17}$

Answer: A

65) $-\frac{2}{5}x - \left(x - \frac{3}{4}\right) = \frac{1}{40}(x + 4)$

A) $x = -\frac{26}{23}$

B) $x = \frac{26}{55}$

C) $x = -\frac{34}{57}$

D) $x = \frac{26}{57}$

Answer: D

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

A) $x = 4$

B) $x = -4$

C) $x = 7$

D) $x = \frac{28}{5}$

Answer: A

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

A) $y = -\frac{11}{18}$

B) $y = \frac{11}{18}$

C) $y = \frac{7}{6}$

D) $y = \frac{11}{6}$

Answer: B

68) $0.03y + 0.09(700 - y) = 0.44y$

A) $y = 31.5$

B) $y = 315$

C) $y = 252$

D) $y = 126$

Answer: D

69) $0.4(60) + 0.6x = 0.5(60 + x)$

A) $x = 70$

B) $x = 60$

C) $x = 30$

D) $x = 50$

Answer: B

70) $0.4x - 0.2(50 + x) = 0.08(50)$

A) $x = 35$

B) $x = 70$

C) $x = 80$

D) $x = 60$

Answer: B

71) $1.3x + 4.5 = 0.7x + 4.26$

A) $x = -0.4$

B) $x = -0.5$

C) $x = -0.44$

D) $x = 2.5$

Answer: A

72) $1.2x + 4.8 = 0.4x - 2.8$

A) $x = -9.51$

B) $x = -9.5$

C) $x = -0.105$

D) $x = -9.595$

Answer: B

Answer Yes or No.

73) Is 20 a solution to $x - 4 = \frac{3}{4}x + 1$?

A) Yes
B) No

Answer: A

74) Is –10 a solution to $x - 4 = \frac{1}{2}x + 1$?

A) Yes
B) No

Answer: B

75) Is –2 a solution to $\frac{1}{4}(x + 6) = \frac{1}{6}x + \frac{4}{3}$?

A) Yes
B) No

Answer: A

76) Is 4 a solution to $\frac{1}{4}(x + 6) = \frac{1}{8}x + 1$?

A) Yes
B) No

Answer: B

Solve.

77) $3(x + 7) = 3x + 21$

A) No solution
B) $x = 42$
C) $x = 0$
D) Infinite number of solutions

Answer: D

78) $5(x + 3) + 1 = 5x + 2$

A) $x = 14$
B) Infinite number of solutions
C) No solution
D) $x = 6$

Answer: C

79) $-6x + 4 + 4x = -2x + 9$

A) $x = -4$
B) No solution
C) Infinite number of solutions
D) $x = 5$

Answer: B

80) $5x - 3 + 6x - 9 = 4x + 7x - 15$

A) $x = 192$

B) No solution

C) $x = 0$

D) Infinite number of solutions

Answer: B

81) $8(x + 1) = 25x + 25 - 17x - 17$

A) Infinite number of solutions

B) $x = 1$

C) No solution

D) $x = 0$

Answer: A

82) $4(x - 3) - 17 = 9x - 5(x - 5)$

A) Infinite number of solutions

B) $x = -42$

C) No solution

D) $x = 8$

Answer: C

83) $12(x + 1) = 6(2x + 1) + 6$

A) $x = 0$

B) No solution

C) $x = 12$

D) Infinite number of solutions

Answer: D

84) $12x + 10(x + 1) = 22(x + 1) - 12$

A) $x = 0$

B) $x = 1$

C) No solution

D) Infinite number of solutions

Answer: D

Write an algebraic expression for the quantity. Let x represent the unknown value.

85) A quantity increased by 96.

A) $\frac{96}{x}$

B) $x - 96$

C) $x + 96$

D) $96x$

Answer: C

86) Six greater than a number.

A) $x - 6$

B) $x + 6$

C) $x > 6$

D) $6 > x$

Answer: B

87) Eight fewer than a number.

A) $x - 8$

B) $x < 8$

C) $8 - x$

D) $8 < x$

Answer: A

88) Five divided by a number.

A) $\frac{5}{x}$

B) $5x$

C) $5 - x$

D) $\frac{x}{5}$

Answer: A

89) A value decreased by five.

A) $5 - x$

B) $\frac{5}{x}$

C) $x - 5$

D) $x + 5$

Answer: C

90) Half of a number.

A) $\frac{1}{2} + x$

B) $\frac{x}{2}$

C) $\frac{1}{2} - x$

D) $x - \frac{1}{2}$

Answer: B

91) The sum of seven times a number and five.

A) $5(x + 7)$

B) $7x + 5$

C) $5x + 7$

D) $7(x + 5)$

Answer: B

92) Eleven times the sum of a number and two.

A) $11x + 2$

B) $2x + 11$

C) $11(x + 2)$

D) $2(x + 11)$

Answer: C

93) Eleven less than three–fourths of a number.

A) $\frac{3x}{4} - 11$

B) $11x - \frac{3}{4}$

C) $\frac{3}{4} - 11x$

D) $11 - \frac{3x}{4}$

Answer: A

94) Ten times a number decreased by one–eighth of the same number.

A) $10(x - \frac{1}{8})$

B) $10x - \frac{x}{8}$

C) $\frac{x}{8} - 10x$

D) $10x - \frac{1}{8}$

Answer: B

Write an algebraic expression for the quantities being compared.

95) Evan works 20 hours per week more than Marc.

A) 20 – x = no. of hours Evan works
x = no. of hours Marc works

B) x + 20 = no. of hours Evan works
x = no. of hours Marc works

C) 20 – x = no. of hours Marc works
x = no. of hours Evan works

D) x – 20 = no. of hours Evan works
x = no. of hours Marc works

Answer: B

96) At Dave's Deli, the turkey sandwich cost $1.83 more than the ham sandwich.

A) 1.83 – x = the cost of the turkey sandwich
x = the cost of the ham sandwich

B) x – 1.83 = the cost of the turkey sandwich
x = the cost of the ham sandwich

C) x + 1.83 = the cost of the turkey sandwich
x = the cost of the ham sandwich

D) 1.83 – x = the cost of the ham sandwich
x = the cost of the turkey sandwich

Answer: C

97) The length of a rectangle is 32 feet more than triple the width.

A) 3w + 32 = length of rectangle
w = width of rectangle

B) 3w – 32 = length of rectangle
w = width of rectangle

C) 3ℓ + 32 = width of rectangle
ℓ = length of rectangle

D) 3ℓ – 32 = width of rectangle
ℓ = length of rectangle

Answer: A

98) The attendance on Monday was 22 people more than on Tuesday. The attendance on Wednesday was 14 people fewer than on Tuesday.

A) x – 14 = attendance on Monday
x = attendance on Tuesday
x + 22 = attendance on Wednesday

B) x + 22 = attendance on Monday
x + 14 = attendance on Tuesday
x = attendance on Wednesday

C) x = attendance on Monday
x + 22 = attendance on Tuesday
x – 14 = attendance on Wednesday

D) x + 22 = attendance on Monday
x = attendance on Tuesday
x – 14 = attendance on Wednesday

Answer: D

99) The first angle of a triangle is triple the third angle. The second angle of a triangle is 20 degrees less than the third angle.

A) first angle = 3x
second angle = x – 20
third angle = x

B) first angle = x
second angle = x – 20
third angle = 3x

C) first angle = x – 20
second angle = 3x
third angle = x

D) first angle = 3x + 20
second angle = x – 20
third angle = x

Answer: A

Solve.

100) What number minus 274 gives 504?

A) 778
B) –230
C) 230
D) –778

Answer: A

101) What number added to 237 gives 608?

A) –371
B) 845
C) –845
D) 371

Answer: D

102) A number divided by eight is 248. What is the number?

A) 1984
B) 240
C) 256
D) 31

Answer: A

103) Six times a number is two. What is the number?

A) –4
B) 12
C) $\frac{1}{3}$
D) 3

Answer: C

104) When two is subtracted from half of a number the result is –2. What is the original number?

A) 0
B) –6
C) –8
D) –2

Answer: A

105) Four less than ten times a number is the same as twelve times the number. Find the number.

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

Answer: A

106) When fifteen is reduced by one–third of a number, the result is 9. Find the number.

A) 21
B) 6
C) –18
D) 18

Answer: D

107) A motorcycle shop maintains an inventory of three times as many new bikes as used bikes. If there are 60 new bikes, how many used bikes are now in stock?
A) 40 used bikes
B) 20 used bikes
C) 30 used bikes
D) 180 used bikes

Answer: B

108) The inventory at AutoPlace is one–sixth the inventory at CarMart. If AutoPlace has 366 vehicles on the lot, how many vehicles does CarMart have in stock?
A) 372 vehicles
B) 2196 vehicles
C) 1098 vehicles
D) 61 vehicles

Answer: B

109) A promotional deal for phone service charges a $15 basic fee plus $0.05 per minute for all calls. If Joe's phone bill was $53 under this promotional deal, how many minutes of phone calls did he make? Round to the nearest integer, if necessary.
A) 2 min
B) 8 min
C) 760 min
D) 1360 min

Answer: C

110) Larry makes $24 per hour for a 40–hour week and time an a half for every hour over 40 hours. If Larry made $1356 last week, how many overtime hours did he work?
A) 56.5 hr
B) 51 hr
C) 11 hr
D) 16.5 hr

Answer: C

111) The cost of renting a scooter is $32 a day plus 5 cents per mile. How far can Michelle drive in one day if she only has $55?
A) 460 mi
B) 151 mi
C) 23 mi
D) 588 mi

Answer: A

112) The force of gravity on a planet varies with the mass of the planet. If the force of gravity on a planet in a distant solar system is about three and one half times that of Earth, how much would an object weighing 630 pounds on Earth weigh on this planet?
A) 180 lb
B) 634.5 lb
C) 1800 lb
D) 2205 lb

Answer: D

113) Two cars start from the same point and travel in the same direction. If one car is traveling 62 miles per hour and the other car is traveling at 49 miles per hour, how far apart will they be after 2.3 hours?

A) 142.6 mi
B) 112.7 mi
C) 29.9 mi
D) 255.3 mi

Answer: C

114) Two trains leave a train station at the same time. One travels north at 10 miles per hour. The other train travels south at 11 miles per hour. In how many hours will the two trains be 111.3 miles apart?

A) 10.6 hr
B) 5.3 hr
C) 2.7 hr
D) 5.8 hr

Answer: B

115) Libby's 4 quiz scores in her math class are 86, 93, 88, and 84. What score does she need to obtain on her next quiz to average an 85? Round to the nearest whole number if necessary.

A) 82
B) 74
C) 66
D) 73

Answer: B

116) Allan's 4 quiz scores in his math class are 90, 90, 81, and 77. What score does he need to obtain on his exam to average an 85 if an exam counts as much as two quizzes?

A) 87
B) 79
C) 68
D) 86

Answer: D

117) Michael hired Heather to iron his dress shirts. Heather charges $40 an hour plus $0.25 for each shirt ironed. Heather worked 3 hours and sent a bill to Michael for $122. How many shirts did Heather iron?

A) 488 shirts
B) 32 shirts
C) 8 shirts
D) 2 shirts

Answer: C

118) Raymond's job pays $22 per hour for the first forty hours and $33 per hour for each hour in the week worked above the 40 hours. If he earned $1111 this week, how many overtime hours did he work?

A) 231 hours
B) 10.5 hours
C) 7 hours
D) 47 hours

Answer: C

119) Bruce and Elaine hired a magician for their daughter's birthday party. The magician charged $40 plus $8 for each child attending the party. The total bill came to $176. How many children attended the party?
A) 22 children
B) 136 children
C) 17 children
D) 5 children

Answer: C

120) Amy charges $80 plus $40 an hour to do a friend's taxes. If her friend's total bill was $320, how many hours did Amy spend doing the taxes?
A) 320 hours
B) 2 hours
C) 10 hours
D) 6 hours

Answer: D

121) Susan charges $160 plus $40 an hour to clean houses. If a client's total bill were $360, how many hours did Susan spend cleaning the client's house?
A) 9 hours
B) 200 hours
C) 4 hours
D) 5 hours

Answer: D

122) A consultant charges $300 plus $60 an hour. How many hours did the consultant work if the total bill were $1020?
A) 12 hours
B) 5 hours
C) 17 hours
D) 720 hours

Answer: A

123) Holly bought a sweater on sale for 40% off the original price. If she saved $48, what was the original price?
A) $19.20
B) $1920.00
C) $72.00
D) $120.00

Answer: D

124) The number of employees that work at a company has increased by 35% over the past year. This year there are 644 more employees with the company than last year. How many employees were there last year?
A) 22,540 employees
B) 1196 employees
C) 1840 employees
D) 18.4 employees

Answer: C

125) When Milo got promoted at work, he received a 20% pay raise. He now earns $74,400 per year. What was his annual salary before his raise?
A) $14,880
B) $12,400
C) $74,400
D) $62,000

Answer: D

126) Logan bought stocks and later sold them for $3,105,000, making a profit of 15%. How much did he pay for the stocks?
A) $4.86e+09
B) $405,000
C) $465,750
D) $2,700,000

Answer: D

127) Ming got a 6% raise in her salary from last year. This year she is earning $50,880. How much did she make last year?
A) $48,000
B) $2880
C) $305,280
D) $8480

Answer: A

128) A brother and sister split the $1,056,000 from the sale of their parent's house. According to the will, the sister was to receive 20% more than her brother, for having managed the property. How much money did the sister receive?
A) $480,000
B) $576,000
C) $211,200
D) $5,280,000

Answer: B

129) A salesperson in an expensive clothing store earns $2300 per month base pay plus a 6% commission on sales. One month she earns $4514.00. What were her sales for that month?
A) $223,700
B) $226,000
C) $36,900
D) $48,134

Answer: C

130) A local animal shelter accepts abandoned cats and dogs. They usually receive twice as many cats as dogs. They estimate that 90% of the cats and 70% of the dogs that come in need some kind of medical treatment. If they treated 350 animals last year, how many cats and dogs did they take in?
A) 280 dogs, 140 cats
B) 280 dogs, 560 cats
C) 140 dogs, 280 cats
D) 140 dogs, 142 cats

Answer: C

131) Alice invested some money at 3% simple interest. At the end of the year the total amount of her original principal and the interest was $3090. How much did she originally invest?
A) $9270
B) $1030
C) $90
D) $3000

Answer: D

132) 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 $900, how much did Kevin invest in the mutual fund?
A) $5000
B) $6000
C) $4000
D) $7000

Answer: B

133) A college student earned $5500 during summer vacation working as a waiter in a popular restaurant. The student invested part of the money at 8% and the rest at 7%. If the student received a total of $413 in interest at the end of the year, how much was invested at 8%?
A) $2750
B) $2700
C) $2800
D) $785

Answer: C

134) A bank loaned out $60,000, part of it at the rate of 12% per year and the rest at a rate of 6% per year. If the interest received was $5640, how much was loaned at 12%?
A) $25,000
B) $26,000
C) $35,000
D) $34,000

Answer: D

135) Melissa invested a sum of money at 3% annual simple interest. She invested three times that sum at 5% annual simple interest. If her total yearly interest from both investments was $5400, how much was invested at 3%?
A) $22,500
B) $202,500
C) $30,000
D) $67,500

Answer: C

136) If $2000 is invested at 10% simple annual interest, how much should be invested at 12% annual simple interest so that the total yearly income from both investments is $5000?
A) $4000
B) $40,000
C) $47,600
D) $4760

Answer: B

137) How can $56,000 be invested, part at 4% annual simple interest and the remainder at 10% annual simple interest, so that the interest earned by the two accounts is equal at the end of the year?
A) $16,000 invested at 4%; $40,000 invested at 10%
B) $40,000 invested at 4%; $16,000 invested at 10%
C) $26,000 invested at 4%; $30,000 invested at 10%
D) $30,000 invested at 4%; $26,000 invested at 10%

Answer: B

138) Sue took her collection of nickels and dimes to deposit in the bank. She has five fewer nickels than dimes. Her total deposit was $73.85. How many dimes did she deposit?
A) 494 dimes
B) 499 dimes
C) 489 dimes
D) 983 dimes

Answer: A

139) Molly has $5.70 in coins. She has five more nickels than dimes. She has seven fewer quarters than dimes. How many quarters does she have?
A) 11 quarters
B) 18 quarters
C) 23 quarters
D) 16 quarters

Answer: A

140) A newspaper carrier has $6.80 in change. He has two more quarters than dimes but three times as many nickels as quarters. How many coins of each type does he have?
A) 14 quarters, 12 dimes, 42 nickels
B) 42 quarters, 40 dimes, 14 nickels
C) 16 quarters, 14 dimes, 48 nickels
D) 14 quarters, 16 dimes, 42 nickels

Answer: A

141) Keema cashed her paycheck and came home from the bank with $2420 in bills of the following denominations: hundreds, twenties, and fives. She has eight times as many fives as twenties and five more hundreds as twenties. How many of each denomination does she have?
A) 17 hundreds, 13 twenties, 92 fives
B) 17 hundreds, 12 twenties, 96 fives
C) 18 hundreds, 12 twenties, 96 fives
D) 19 hundreds, 12 twenties, 88 fives

Answer: B

142) A theatrical production company donated free tickets for their show to the local Boys & Girls Club. They claimed that the ticket value was $216 A child's ticket cost $6.75 and an adult ticket cost $10.50. If there were twice as many children's tickets as adult tickets, how many adults and children got to attend the show for free?
A) 9 adult tickets, 18 children's tickets
B) 9 adult tickets, 11 children's tickets
C) 18 adult tickets, 9 children's tickets
D) 18 adult tickets, 36 children's tickets

Answer: A

Replace the ? by < or >.

143) 8 ? –2

A) >

B) <

Answer: A

144) –8 ? –4

A) >

B) <

Answer: B

145) –0.9 ? 0.6

A) >

B) <

Answer: B

146) –3 ? $-\frac{19}{4}$

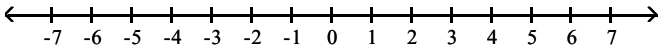
A) >

B) <

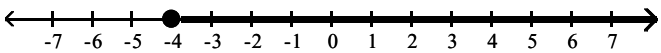
Answer: A

Graph the inequality on the number line.

147) x > –4



A)



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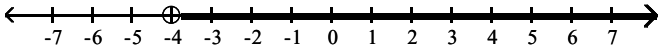
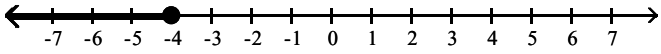
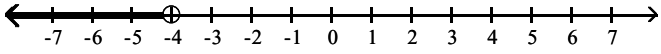


C)

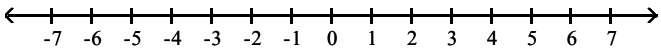


D)

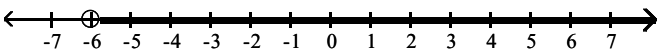


Answer: B

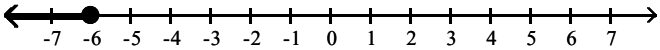
148) $x < -6$



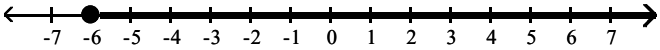
A)



B)



C)



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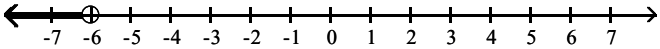
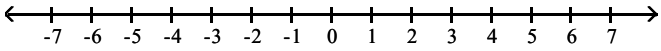
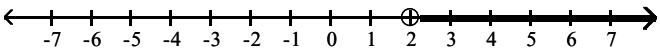


Answer: D

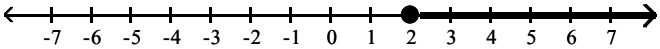
149) $x \geq 2$



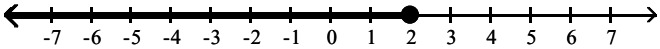
A)



B)



C)



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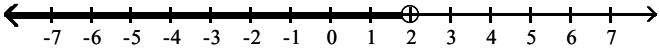
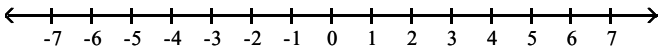
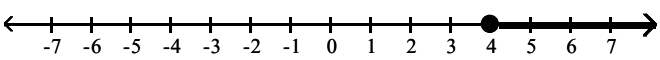


Answer: B

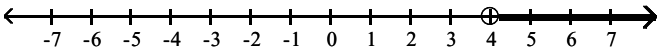
150) $x \leq 4$



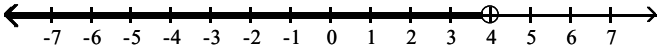
A)



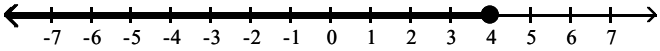
B)



C)

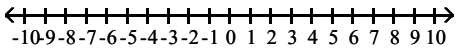


D)

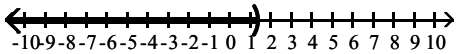


Answer: D

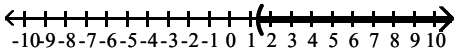
151) $x < \frac{7}{5}$



A)



B)



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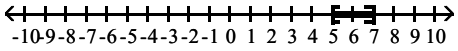
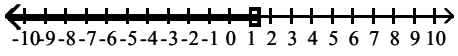


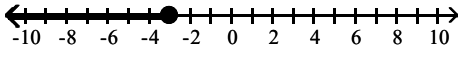
D)



Answer: A

Translate each graph to an inequality using the variable x.

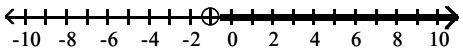
152)



A) $x \geq -3$
B) $x > -3$
C) $x < -3$
D) $x \leq -3$

Answer: D

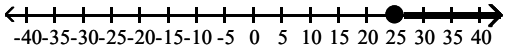
153)



A) $x < -1$
B) $x > -1$
C) $x \leq -1$
D) $x \geq -1$

Answer: B

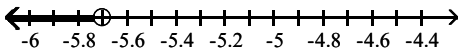
154)



A) $x < 25$
B) $x \leq 25$
C) $x \geq 25$
D) $x > 25$

Answer: C

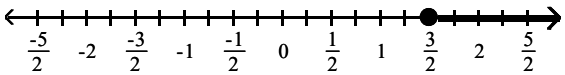
155)



A) $x > -5.7$
B) $x \leq -5.7$
C) $x \geq -5.7$
D) $x < -5.7$

Answer: D

156)



A) $x \leq \frac{3}{2}$

B) $x \geq \frac{3}{2}$

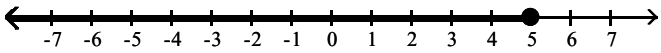
C) $x < \frac{3}{2}$

D) $x > \frac{3}{2}$

Answer: B

Translate the graph to an inequality using the variable x.

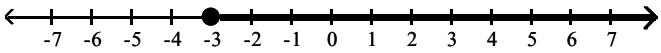
157)



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

Answer: C

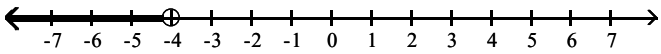
158)



A) $x \leq -3$
B) $x \geq -3$
C) $x < -3$
D) $x > -3$

Answer: B

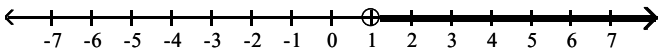
159)



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

Answer: D

160)



A) $x \leq 1$
B) $x \geq 1$
C) $x < 1$
D) $x > 1$

Answer: D

Translate the English statement into an inequality.

161) The cost of shoes must be less than $72. (Use the variable c for the cost.)

A) $c \leq 72$
B) $c < 72$
C) $c \geq 72$
D) $c > 72$

Answer: B

162) The speed of the bike is more than 16 mph. (Use the variable s for the speed.)

A) $s \leq 16$

B) $s \geq 16$

C) $s > 16$

D) $s < 16$

Answer: C

163) The number of people the school can hold is at most 140. (Use the variable p for number of people.)

A) $p \leq 140$

B) $p \geq 140$

C) $p < 140$

D) $p > 140$

Answer: A

164) The rocket must reach a speed of at least 956 mph. (Use the variable V for speed.)

A) $V \geq 956$

B) $V \leq 956$

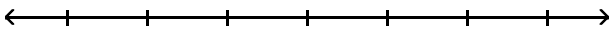
C) $V > 956$

D) $V < 956$

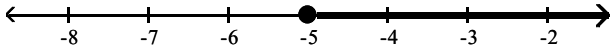
Answer: A

Solve the inequality. Graph the results.

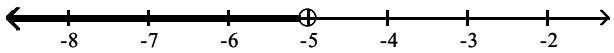
165) $x - 10 < -15$



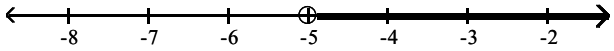
A) $x \geq -5$



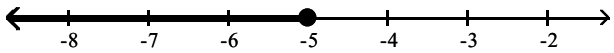
B) $x < -5$



C) $x > -5$

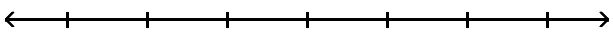


D) $x \leq -5$

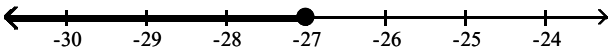


Answer: B

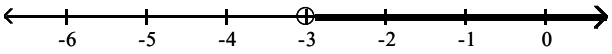
166) $13x - 12 > 12x - 15$



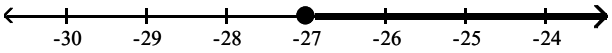
A) $x \leq -27$



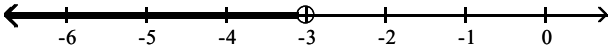
B) $x > -3$



C) $x \geq -27$

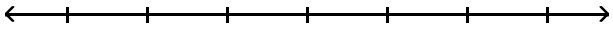


D) $x < -3$

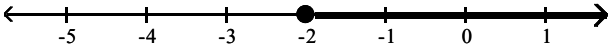


Answer: B

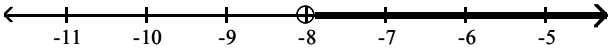
167) $-8x + 11 \leq -9x + 9$



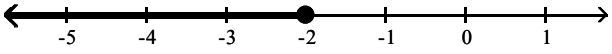
A) $x \geq -2$



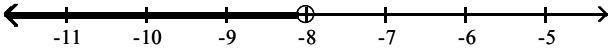
B) $x > -8$



C) $x \leq -2$

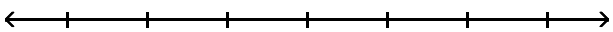


D) $x < -8$

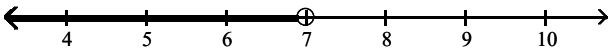


Answer: C

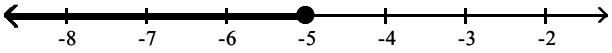
168) $7x - 4 \geq 6x - 9$



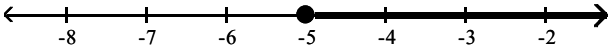
A) $x < 7$



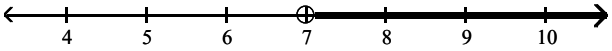
B) $x \leq -5$



C) $x \geq -5$

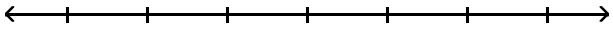


D) $x > 7$

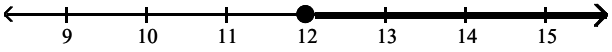


Answer: C

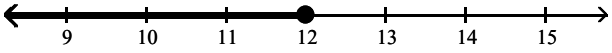
169) $x - 5 < 7$



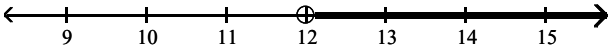
A) $x \geq 12$



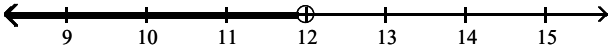
B) $x \leq 12$



C) $x > 12$

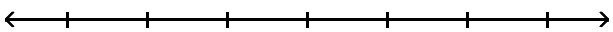


D) $x < 12$

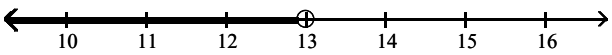


Answer: D

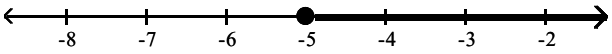
170) $-2 + 13x + 12 \geq 12x + 5$



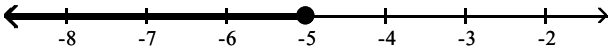
A) $x < 13$



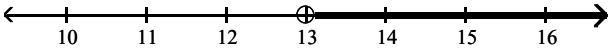
B) $x \geq -5$



C) $x \leq -5$

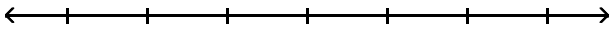


D) $x > 13$

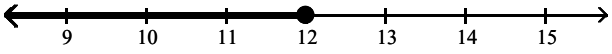


Answer: B

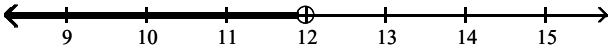
171) $\frac{x}{6} \geq 2$



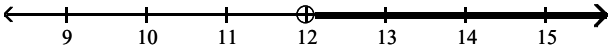
A)



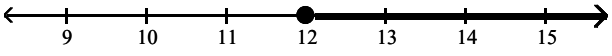
B)



C)

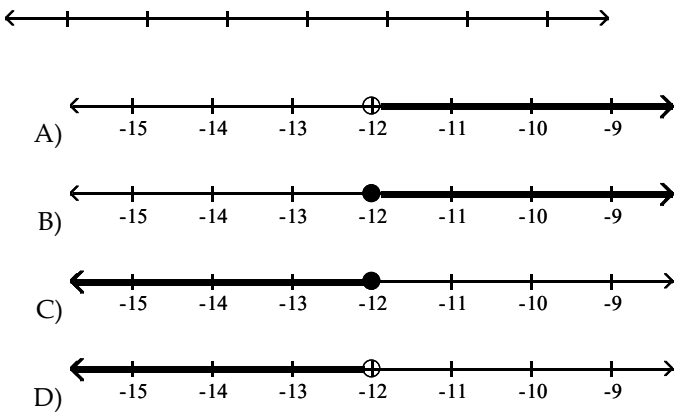


D)



Answer: D

172) $-2 < \frac{x}{6}$



Answer: A

Solve the inequality.

173) $-7x - 3 > -8x - 5$

A) $x \leq -8$
B) $x \geq -8$
C) $x < -2$
D) $x > -2$

Answer: D

174) $42x + 42 > 6(6x + 14)$

A) $x \geq 7$
B) $x > 7$
C) $x \leq 7$
D) $x < 7$

Answer: B

175) $-4(4x - 2) < -20x + 12$

A) $x \geq 1$
B) $x \leq 1$
C) $x < 1$
D) $x > 1$

Answer: C

176) $-35x - 25 \leq -5(6x + 13)$

A) $x > 8$
B) $x < 8$
C) $x \geq 8$
D) $x \leq 8$

Answer: C

177) $14x + 18 \leq 2(6x + 10)$

A) $x < 1$
B) $x \leq 1$
C) $x \geq 1$
D) $x > 1$

Answer: B

178) $-3x + 4 + 9x < 10 + 4x + 6$

A) $x \geq 10$
B) $x > 6$
C) $x \leq 10$
D) $x < 6$

Answer: D

179) $\frac{4}{21}(x + 2) > \frac{1}{7}(x + 6)$

A) $x > 10$
B) $x < -10$
C) $x < 10$
D) $x > -10$

Answer: A

180) $\frac{x + 3}{4} - \frac{1}{36} > \frac{x + 4}{9}$

A) $x > -2$
B) $x < -2$
C) $x < -\frac{12}{13}$
D) $x > \frac{44}{5}$

Answer: A

181) $1.6(1.3 - x) + 0.5 > 2.4(x + 0.6)$ (Round to two decimal places if necessary)

A) $x < 0.29$
B) $x > 1.43$
C) $x > 0.29$
D) $x < 1.43$

Answer: A

Solve the problem.

182) John has received scores of 85, 88, 87, and 75 on her algebra tests. What is the minimum score he must receive on the fifth test to have an overall test score average of at least 83? (Hint: The average of a list of numbers is their sum divided by the number of numbers in the list.)

A) 81
B) 80
C) 79
D) 78

Answer: B

Solve for the variable.

183) $2x + 3.3 = 11.3$

A) $x = 2$
B) $x = 6$
C) $x = 4$
D) $x = 10$

Answer: C

184) $-5x + 9 = -10 + 4x$

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

Answer: B

185) $5(y + 4) = 6(y - 4)$

A) $y = 4$
B) $y = -4$
C) $y = 44$
D) $y = -44$

Answer: C

186) $\frac{2}{5}y - 4 = \frac{1}{3}y$

A) $y = 120$
B) $y = -60$
C) $y = 60$
D) $y = -120$

Answer: C

187) $2(x + 2) = 3(x - 8)$

A) $x = -20$
B) $x = -28$
C) $x = 20$
D) $x = 28$

Answer: D

188) $-8.6 + 2x - 6.5 + 5x - 2.6 = 5.3 + 8x + 1.8$

A) $x = 10.6$
B) $x = -10.6$
C) $x = 24.8$
D) $x = -24.8$

Answer: D

189) $\frac{3}{5}y + \frac{5}{7} = -\frac{2}{5}y - \frac{1}{2}$

A) $y = -\frac{17}{14}$

B) $y = -\frac{10}{17}$

C) $y = \frac{3}{14}$

D) $y = \frac{17}{14}$

Answer: A

190) $6y + 2 - 5(y + 1) = -5y + 6$

A) $y = -5$

B) $y = \frac{13}{10}$

C) $y = \frac{3}{2}$

D) $y = -\frac{1}{2}$

Answer: C

191) $12(9x - 8) = 5x - 8$

A) $x = \frac{104}{103}$

B) $x = \frac{88}{103}$

C) $x = -\frac{88}{103}$

D) $x = \frac{88}{113}$

Answer: B

192) $3(x + 3) = 4(x - 6)$

A) $x = -15$

B) $x = 33$

C) $x = -33$

D) $x = 15$

Answer: B

193) $3(2x - 5) = 5(x + 5)$

A) $x = 40$

B) $x = 10$

C) $x = 13$

D) $x = -10$

Answer: A

194) $3(x - 5) - (2x - 7) = -1$

A) $x = -9$

B) $x = -7$

C) $x = 7$

D) $x = 3$

Answer: C

Solve for x.

195) $-4(x + 8) - (-5x + 7) = -7$

A) $x = -32$

B) $x = -46$

C) $x = 32$

D) $x = 8$

Answer: C

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

A) $x = -45$

B) $x = 45$

C) $x = 90$

D) $x = -90$

Answer: B

197) $\frac{3}{4}x + \frac{5}{9} = -\frac{1}{4}x - \frac{1}{2}$

A) $x = \frac{1}{18}$

B) $x = -\frac{10}{19}$

C) $x = -\frac{19}{18}$

D) $x = \frac{19}{18}$

Answer: C

198) $\frac{-3x + 2}{6} + \frac{3}{2} = -\frac{5x}{2}$

A) $x = \frac{11}{18}$

B) $x = -\frac{11}{12}$

C) $x = \frac{7}{12}$

D) $x = -\frac{7}{12}$

Answer: B

199) $-\frac{1}{2}(x-4) - \frac{1}{7}(x-7) = x+9$

A) $x = -\frac{168}{23}$

B) $x = -\frac{112}{23}$

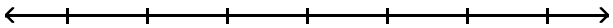
C) $x = -\frac{140}{23}$

D) $x = -\frac{84}{23}$

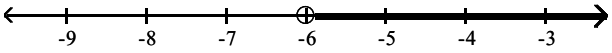
Answer: D

Solve and graph the inequality.

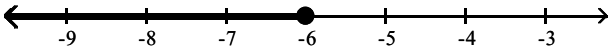
200) $-6(2x-3) < -18x - 18$



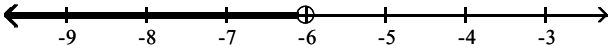
A) $x > -6$



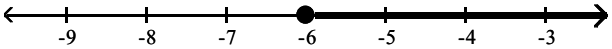
B) $x \leq -6$



C) $x < -6$

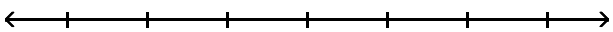


D) $x \geq -6$

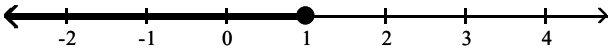


Answer: C

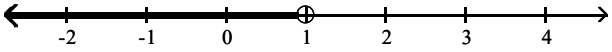
201) $24x + 8 - 4(5x + 3) \geq 0$



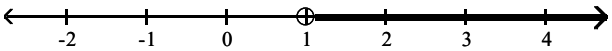
A) $x \leq 1$



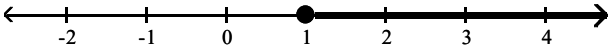
B) $x < 1$



C) $x > 1$

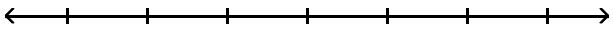


D) $x \geq 1$

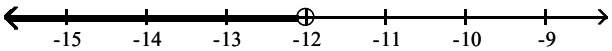


Answer: D

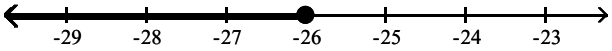
202) $12x - 7 > 11x - 19$



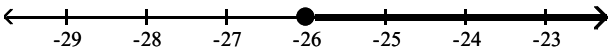
A) $x < -12$



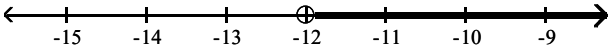
B) $x \leq -26$



C) $x \geq -26$

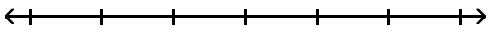


D) $x > -12$

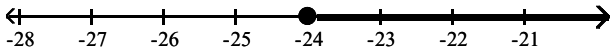


Answer: D

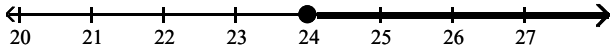
203) $\frac{1}{3}(x + 6) \leq \frac{2}{5}(x + 1)$



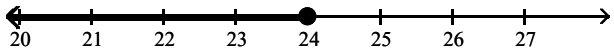
A) $x \geq -24$



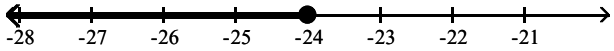
B) $x \geq 24$



C) $x \leq 24$



D) $x \leq -24$



Answer: B

Solve.

204) A number is doubled and then decreased by 14. The result is 72. What is the original number?

A) 43
B) –29
C) 172
D) 29

Answer: A

205) The sum of one–half a number, one–third of the number, and one–twelfth of the number is 55. Find the original number.

A) 50
B) 5
C) 60
D) 66

Answer: C

206) One number is 8 less than three times a second number. The sum of the two numbers is 16. Find each number.

A) 12 and 10
B) 6 and 4
C) 6 and 10
D) 4 and 12

Answer: C

207) Josh and Sam traveled in separate cars from their apartment to a ski resort 360 miles away. Sam wanted to get there early, so he traveled the maximum speed limit, 60 mph. Josh just bought a new car, so he drove a little slower at exactly 40 mph. If they both left at the same time, how much sooner did Sam arrive at the ski resort than Josh?

A) 3 hours sooner
B) 2 hours sooner
C) they arrive at the same time
D) 1 hour sooner

Answer: A

208) In a triangle, the measure of the first angle is four times the measure of the second angle. The measure of the third angle is 150 degrees more than the second angle. What is the measure of the first angle?

A) 5°
B) 20°
C) 55°
D) 155°

Answer: B

209) Gary has a budget of $1930 to rent a computer for his company office. The computer company he wants to rent from charges $250 for installation and service as a one–time fee. Then they charge $105 per month rental for the computer. How many months will Gary be able to rent a computer with this budget?

A) 18 months
B) 16 months
C) 21 months
D) 14 months

Answer: B

210) Last year the yearly tuition at State University went up 5%. This year's charge for tuition for the year is $50,400. What was it last year before the increase went into effect?

A) $48,000
B) $50,400
C) $2400
D) $2520

Answer: A

211) Charlotte invested $6000 in money market funds. Part was invested at 15% interest, the rest at 11% interest. At the end of each year the fund company pays interest. After one year she earned $764 in simple interest. How much was invested at each interest rate?

A) $2400 at 15%;
$3600 at 11%
B) $2600 at 11%;
$3400 at 15%
C) $2400 at 11%;
$3600 at 15%
D) $2600 at 15%;
$3400 at 11%

Answer: D

212) Nancy has $1.80 in change. She has three times as many nickels as quarters. She has two more quarters than dimes. How many coins of each type does he have?

A) 4 quarters, 2 dimes, 12 nickels
B) 6 quarters, 4 dimes, 18 nickels
C) 4 quarters, 6 dimes, 12 nickels
D) 12 quarters, 10 dimes, 4 nickels

Answer: A