1. Is -5 a solution of $6x+12=-18$?
   A) No
   B) Yes

2. Is -4 a solution of $2x-6=x-10$?
   A) Yes
   B) No

3. Is $\frac{1}{6}$ a solution of $5x-8=1-8x$?
   A) Yes
   B) No

4. Solve.
   $z-10=12$
   A) -10
   B) -22
   C) 2
   D) 22
   E) -2

5. Solve.
   $2+x=10$
   A) 20
   B) -8
   C) 8
   D) 12
   E) -2

6. Solve.
   $m-2=-9$
   A) 9
   B) 7
   C) 11
   D) -7
   E) 2

7. Solve.

$$x + 6 = 5$$

A) –1
B) 1
C) 5
D) –11
E) 11

8. Solve.

$$z + 4 = -4$$

A) 8
B) –4
C) 0
D) 4
E) –8

9. Solve.

$$3 + y = 0$$

A) –10
B) –3
C) –6
D) 1
E) 3

10. Solve.

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

A) $\frac{5}{7}$
B) $\frac{6}{7}$
C) $\frac{8}{7}$
D) 0
E) 7

11. Solve.

$$7x = 35$$

A) –7
B) 5
C) –35
D) 245
E) –5

12. Solve.

$$2z = -14$$

A) –28
B) 7
C) –7
D) –12
E) –16

13. Solve.

$$-8t = 80$$

A) –640
B) 10
C) 72
D) –10
E) 88

14. Solve.

$$-7y = -98$$

A) 14
B) –14
C) 686
D) –105
E) –91

15. Solve.

$$\frac{y}{7} = 12$$

A) –5
B) –84
C) 84
D) –19
E) 19

16. Solve.

$$\frac{y}{9} = -6$$

A) 54
B) 3
C) –3
D) –15
E) –54

17. Solve.

$$-\frac{y}{4} = 5$$

A) 9
B) –20
C) 1
D) –5
E) 20

18. Solve.

$$\frac{8}{13}x = 16$$

A) $\frac{1}{33}$
B) $\frac{1}{26}$
C) 33
D) 26
E) 208

19. Solve.

$$\frac{7}{12}x = -35$$

A) –420
B) $-\frac{1}{60}$
C) –245
D) $\frac{12}{7}$
E) –60

20. Solve.

$$-\frac{1}{2}x = -14$$

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

B) $\frac{1}{28}$

C) 196

D) 28

E) –196

21. Solve.

$$5a - 9a = 6$$

A) $-1\frac{1}{2}$

B) $-2\frac{1}{2}$

C) $-2\frac{1}{4}$

D) –1

E) –3

22. What is 80% of 20?

A) 4

B) 16

C) 20

D) 1.6

E) 80

23. 0.5 is _____% of 20.

A) 0.025

B) 40

C) 0.4

D) 0.1

E) 2.5

24. Find $18\frac{1}{3}\%$ of 60.
    A) 15
    B) 14
    C) 13
    D) 12
    E) 11

25. 33 is _____% of 30.
    A) 1.1
    B) 3000
    C) 110
    D) 9.9
    E) 990

26. 2 is $\frac{1}{2}\%$ of _____.
    A) 4
    B) 100
    C) 1
    D) 0.04
    E) 400

27. Apple Dan's 30-ounce apple-flavored fruit drink contains 7 oz of apple juice. A 41-ounce generic brand of an apple-flavored fruit drink contains 8 oz of apple juice. Which of the two brands has the greater concentration of apple juice?
    A) Apple Dan's brand
    B) Generic brand
    C) Same concentration

28. As part of a training program, a runner wants to build endurance by running at a rate of 10 mph for 12 min. How many miles will the runner travel in that time period?
    A) 120 mi
    B) 22 mi
    C) 3 mi
    D) 2 mi
    E) 1.2 mi

29. Palmer's average running speed is 3 kilometers per hour faster than his walking speed. If Palmer can run around a 30-kilometer course in 4 hours, how many hours would it take for Palmer to walk the same course? (Round your answer to two decimal places.)
    A) 7.41 h
    B) 5.93 h
    C) 6.67 h
    D) 10.00 h
    E) 7.04 h

30. Two cyclists start from the same point at the same time and move in opposite directions. One cyclist is traveling at 5 mph, and the other cyclist is traveling at 9 mph. After 30 min, how many miles apart are the two cyclists?
    A) 7 mi
    B) 2.5 mi
    C) 4.5 mi
    D) 14 mi
    E) 4 mi

31. At 6:00 A.M., a train leaves a station and travels at a rate of 40 mph. At 8:00 A.M., a second train leaves the same station on the same track and travels in the direction of the first train at a speed of 60 mph. At 11:00 A.M., how many miles separate the two trains?
    A) 35 mi
    B) 30 mi
    C) 25 mi
    D) 20 mi
    E) 15 mi

32. Solve.

$$4w + 12 = 8$$

    A) 1
    B) –1
    C) 4
    D) –16
    E) –4

33. Solve.

$$10n - 3 = 27$$

A) 14
B) –3
C) 3
D) 24
E) 17

34. Solve.

$$7z - 4 = -53$$

A) –49
B) 7
C) –57
D) –7
E) –46

35. Solve.

$$4 - 4x = 28$$

A) –24
B) 6
C) 24
D) 32
E) –6

36. Solve.

$$5 + 7x = 33$$

A) 4
B) 12
C) 38
D) 28
E) –4

37. Solve.

$$2x + 6 = 0$$

A) –8
B) 3
C) –3
D) –6
E) –2

38. Solve.

$$-7x - 2 = 47$$

A) –5
B) 47
C) –47
D) –7
E) 56

39. Solve.

$$-8x + 6 = -50$$

A) 2
B) –56
C) –2
D) 50
E) 7

40. Solve.

$$5x + 15 = 15$$

A) –5
B) 0
C) 3
D) 30
E) –15

41. Solve.

$$-3x + 5 = -8$$

A) $4\frac{1}{6}$
B) $5\frac{1}{3}$
C) $6\frac{1}{6}$
D) $5\frac{1}{6}$
E) $4\frac{1}{3}$

42. Solve.

$$2x - 4 = -7$$

A) $-1\frac{1}{2}$

B) $-2\frac{1}{2}$

C) $-3\frac{1}{4}$

D) $-2\frac{1}{4}$

E) $-1\frac{1}{4}$

43. Solve.

$$2.5x - 0.5 = 12$$

A) 12.5
B) 2
C) 4.8
D) 11.5
E) 5

44. Solve.

$$\frac{1}{2}x - 4 = 6$$

A) –20
B) –4
C) 20
D) 14
E) 4

45. Solve.

$$\frac{8}{11}x + 5 = 1$$

A) $-5\frac{1}{2}$

B) $-6\frac{1}{2}$

C) $-4\frac{1}{4}$

D) $-6\frac{1}{4}$

E) $-5\frac{1}{4}$

46. Solve.

$$\frac{v}{2} - 4 = -10$$

A) –28
B) –12
C) –6
D) 28
E) 12

47. Solve.

$$3m + 8m - 4 = 29$$

A) 33
B) 3
C) 18
D) 11
E) 7

48. Solve.

$$3y - 7y - 10 = -6$$

A) 4
B) –7
C) –1
D) –16
E) –4

49. Solve.

$$7x+19=2x+4$$

A) 23
B) –9
C) –15
D) –12
E) –3

50. Solve.

$$2x+4=x-5$$

A) –9
B) –8
C) –10
D) –23
E) 12

51. Solve.

$$8n-6=6n-12$$

A) –8
B) –3
C) –16
D) 18
E) 2

52. Solve.

$$4x+3=57-2x$$

A) 4
B) 9
C) –48
D) 54
E) –52

53. Solve.

$$-3t-2=-6t-29$$

A) –12
B) 9
C) –9
D) 30
E) –2

54. Solve.

$$5-8x=23-2x$$

A) –3
B) –10
C) 18
D) 3
E) 10

55. Solve.

$$20+2x=34+4x$$

A) 7
B) –11
C) 18
D) –18
E) –7

56. Solve.

$$20x+5=5x+8$$

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

57. Solve.

$$2x-1=9x-2$$

A) $\frac{1}{8}$
B) $\frac{1}{7}$
C) $\frac{1}{6}$
D) 7
E) 6

58. If $7b = 3b - 20$ evaluate $2b + 3$.

A) –7
B) –2
C) –1
D) –5
E) –13

59. Solve.

$$4x + 5(x - 2) = 8$$

A) 4
B) 9
C) 3
D) 2
E) –2

60. Solve.

$$22x + 6(x - 1) = 82$$

A) $3\frac{1}{4}$
B) $3\frac{2}{7}$
C) $4\frac{1}{7}$
D) $3\frac{1}{7}$
E) $4\frac{1}{4}$

61. Solve.

$$3 - 6(x + 2) = 3$$

A) 2
B) –2
C) –5
D) 18
E) 12

62. Solve.

$$-2+5(x+8)=13$$

A) –25
B) 2
C) –5
D) –4
E) –30

63. Solve.

$$4(x-7)+3x=14$$

A) 3
B) 42
C) 6
D) 35
E) 14

64. Solve.

$$5x+3(x+2)=2(x+9)$$

A) 9
B) –3
C) 0
D) 3
E) 2

65. If $3-7x=-25-8(3x+5)$, evaluate $3x^2+8x$.

A) 16
B) –4
C) –17.5
D) 778.75
E) 878.75

66. An adult and a child are on a seesaw 16 ft long. The adult weighs 154 lb and the child weighs 70 lb.

    How many feet from the child must the fulcrum be placed so that the seesaw balances?

    Use the lever system equation $F_1x = F_2(d - x),$ where d is the length of the lever and x is the distance of the fulcrum from the child.

    A) 6 ft
    B) 7 ft
    C) 11 ft
    D) 16 ft
    E) 18 ft

67. To determine the break-even point, or the number of units that must be sold so that no profit or loss occurs, an economist uses the formula $Px = Cx + F$, where P is the selling price per unit, x is the number of units that must be sold to break even, C is the cost to make each unit, and F is the fixed cost.

    A business analyst has determined that the selling price for a laser printer is $1600. The cost to make one laser printer is $960, and the fixed cost is $211,200.

    Find the break-even point.

    A) 132 printers
    B) 330 printers
    C) 82.5 printers
    D) 1270 printers
    E) 630 printers

68. The difference between a number and fifteen is seven.

    Find the number.

    A) 26
    B) 24
    C) 22
    D) 19
    E) 41

69. Two thirds of a number is eighteen.

Find the number.
A) 24
B) 28
C) 21
D) 27
E) 55

70. Four more than three times a number is nineteen.

Find the number.
A) 5
B) 6
C) 2
D) 0
E) 16

71. The sum of twice a number and six is eighteen.

Find the number.
A) 2
B) 11
C) 6
D) 3
E) 15

72. Three times the difference between ten times a number and three is eighty-one.

Find the number.
A) –1
B) 7
C) 3
D) 1
E) 12

73. The sum of two numbers is twenty. Three times the smaller number is equal to two times the larger number.

    Find the larger number.
    A) 11
    B) 13
    C) 12
    D) 6
    E) 30

74. The sum of three consecutive odd numbers is 105.

    Find the first number.
    A) 23
    B) 41
    C) 33
    D) 25
    E) 68

75. Find two consecutive even integers such that six times the first equals four times the second.

    Find the smaller number.
    A) 2
    B) 8
    C) 12
    D) 10
    E) 4

76. An isosceles triangle has two sides of equal length. The length of the third side is 2 ft less than twice the length of an equal side.

    Find the length of the equal sides when the perimeter is 34 ft.
    A) 8 ft
    B) 11 ft
    C) 14 ft
    D) 20 ft
    E) 9 ft

77. A union charges monthly dues of $4.39 plus $0.13 for each hour worked during a month. A union member's dues for March were $25.71.

    How many hours did the union member work during the month of March?
    A) 164 h
    B) 165 h
    C) 166 h
    D) 330 h
    E) 161 h

78. An herbalist has 28 oz of herbs costing $1.95 per ounce. How many ounces of herbs costing $1 per ounce should be mixed with the 28 oz to produce a mixture costing $1.532 per ounce?
    A) 19 oz
    B) 27 oz
    C) 20 oz
    D) 22 oz
    E) 26 oz

79. Find the cost per ounce of a sunscreen made from 24 oz of a lotion that costs $2.60 per ounce and 50 oz of a lotion that costs $3.40 per ounce.
    A) $4.14 per oz
    B) $3.14 per oz
    C) $2.97 per oz
    D) $3.64 per oz
    E) $3.44 per oz

80. Ten cups of a restaurant's house Italian dressing is made up by blending olive oil costing $1.20 per cup with vinegar that costs $0.40 per cup.

    How many cups of oil are used if the cost of the blend is $0.88 per cup?
    A) 9 c
    B) 2 c
    C) 6 c
    D) 10 c
    E) 5 c

81. Forty ounces of a 35% gold alloy are mixed with 68 oz of a 22% alloy.

Find the concentration of the resulting gold alloy.
A) 25.48%
B) 26.15%
C) 26.01%
D) 26.81%
E) 19.81%

82. A tea that is 22% jasmine is blended with a tea that is 15% jasmine.

How many pounds of the 15% jasmine tea are used to make 10 lb of tea that is 18.5% jasmine?
A) 5 lb
B) 7 lb
C) 8 lb
D) 4 lb
E) 6 lb

83. How many ounces of pure bran flakes must be added to 90 oz of cereal that is 42% bran flakes to produce a mixture that is 47.8% bran flakes?
A) 7 oz
B) 9 oz
C) 18 oz
D) 14 oz
E) 10 oz

84. Two small planes start from the same point and fly in opposite directions. The first plane is flying 30 mph slower than the second plane. In 2 h, the planes are 460 mi apart.

Find the rate of the slower plane.
A) 90 mph
B) 100 mph
C) 75 mph
D) 106 mph
E) 102 mph

85. A motorboat leaves a harbor and travels at an average speed of 12 mph towards a small island. Two hours later, a cabin cruiser leaves the same harbor at an average speed of 24 mph toward the same island.

    In how many hours after the cabin cruiser leaves the harbor will it be alongside the motorboat?
    A) 1 h
    B) 5 h
    C) 2 h
    D) 3 h
    E) 7 h

86. A 590-mile, 5 hour plane trip was flown at two speeds. For the first part of the trip, the average speed was 120 mph. For the remainder of the trip, the average speed was 115 mph.

    How long did the plane fly at 120 mph?
    A) 2 h
    B) 4 h
    C) 3 h
    D) 6 h
    E) 9 h

87. A passenger train leaves a train depot two hours after a freight train leaves the same depot. The freight train is traveling 20 mph slower than the passenger train.

    Find the rate of the freight train if the passenger train overtakes the freight train after 3.4 h.
    A) 30 mph
    B) 38 mph
    C) 34 mph
    D) 50 mph
    E) 54 mph

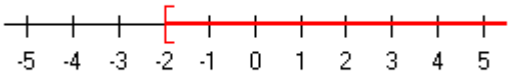
88. At 10 A.M. a plane leaves Boston, Massachusetts, for Seattle, Washington, a distance of 3000 mi. Two hours later a plane leaves Seattle for Boston. Both planes are traveling at a speed of 600 mph.

How many hours after the plane leaves Seattle will the planes pass each other?

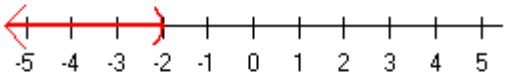
A) 0.50 h
B) 4.00 h
C) 2.50 h
D) 1.50 h
E) 2.00 h

89. Graph the solution set for the inequality $x - 4 < -6$.

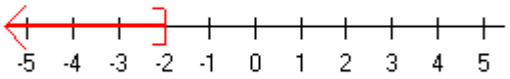
A)



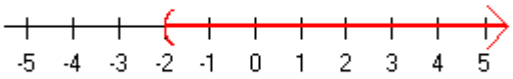
B)



C)



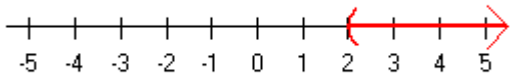
D)



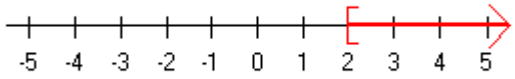
E) None of the above

90. Graph the solution set for the inequality $x + 4 \geq 6$.

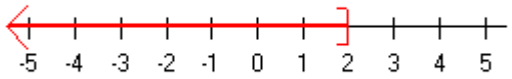
A)



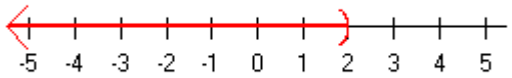
B)



C)



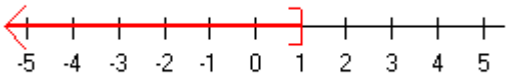
D)



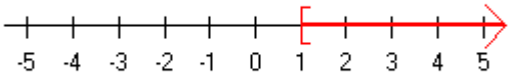
E) None of the above

91. Graph the solution set for the inequality $3x \leq 3$.

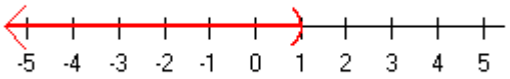
A)



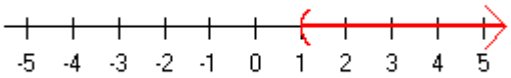
B)



C)



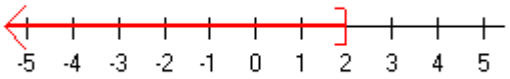
D)



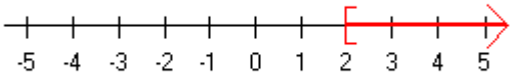
E) None of the above

92. Graph the solution set for the inequality $6x > 12$.

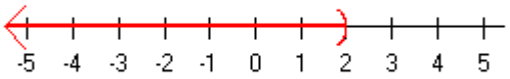
A)



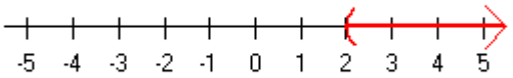
B)



C)



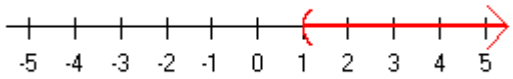
D)



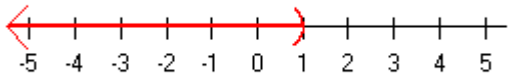
E) None of the above

93. Graph the solution set for the inequality $-1x > -1$.

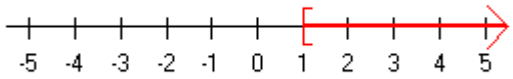
A)



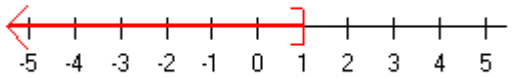
B)



C)



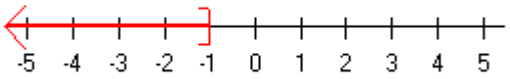
D)



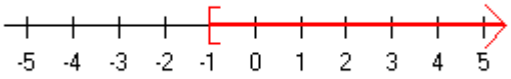
E) None of the above

94. Graph the solution set for the inequality $-2x \le 2$.

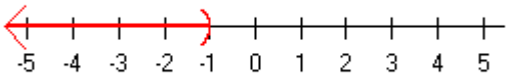
A)



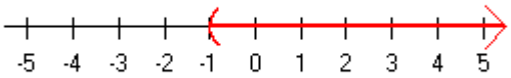
B)



C)



D)



E) None of the above

95. Solve the inequality $8x - 4 > 7x + 4$. Write the solution in set-builder notation.

A) $\{x \mid x < 9\}$
B) $\{x \mid x > 8\}$
C) $\{x \mid x < 8\}$
D) $\{x \mid x > 9\}$
E) $\{x \mid x > -8\}$

96. Solve the inequality $8x - 3 > 53$. Write the solution in set-builder notation.

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

97. Solve the inequality $2x+4\le 0$. Write the solution in set-builder notation.
A) $\{x \mid x \le 2\}$
B) $\{x \mid x \ge -2\}$
C) $\{x \mid x \le -2\}$
D) $\{x \mid x \ge -1\}$
E) $\{x \mid x \ge 2\}$

98. Solve the inequality $6x-1>4x-17$. Write the solution in set-builder notation.
A) $\{x \mid x < -8\}$
B) $\{x \mid x > 8\}$
C) $\{x \mid x < 7\}$
D) $\{x \mid x > -8\}$
E) $\{x \mid x > -7\}$

99. Solve the inequality $11x-1<8x+14$. Write the solution in set-builder notation.
A) $\{x \mid x < 5\}$
B) $\{x \mid x > -6\}$
C) $\{x \mid x < 6\}$
D) $\{x \mid x > 6\}$
E) $\{x \mid x > 5\}$

100. Solve the inequality $3-2x<15$. Write the solution in set-builder notation.
A) $\{x \mid x < -6\}$
B) $\{x \mid x > -5\}$
C) $\{x \mid x < 5\}$
D) $\{x \mid x > -6\}$
E) $\{x \mid x > 6\}$

101. Solve the inequality $6x+5\le 16x+7$. Write the solution in set-builder notation.
A) $\left\{x \middle| x \ge -\frac{1}{5}\right\}$
B) $\{x \mid x \ge -5\}$
C) $\{x \mid x \le 5\}$
D) $\{x \mid x \ge 5\}$
E) $\left\{x \middle| x \ge \frac{1}{5}\right\}$

102. Solve the inequality $9x - 16 \geq -8x + 18$. Write the solution in interval notation.

A) $(-\infty, 2]$

B) $(\infty, -2)$

C) $[2, \infty)$

D) $(2, \infty)$

E) $(-\infty, 2)$

103. Solve the inequality $\frac{3}{4}x - \frac{4}{3} < \frac{13}{12} - \frac{1}{2}x$. Write the solution in interval notation.

A) $\left[\frac{29}{15}, \infty\right)$

B) $\left(-\infty, \frac{29}{15}\right]$

C) $\left(\frac{29}{15}, \infty\right)$

D) $\left(-\infty, -\frac{29}{15}\right]$

E) $\left(-\infty, \frac{29}{15}\right)$

104. Solve the inequality $4 - 2(x - 4) \leq 2x + 8$. Write the solution in interval notation.

A) $(\infty, -1)$

B) $(1, \infty)$

C) $(-\infty, 1]$

D) $[1, \infty)$

E) $(-\infty, 1)$

105. Solve the inequality $-12 - (2 - 11x) < 4(3x - 2)$. Write the solution in interval notation.

A) $(-\infty, -6]$

B) $(-6, \infty)$

C) $(\infty, 6)$

D) $[-6, \infty)$

E) $(-\infty, -6)$

106. Solve the inequality $2x-3(2x-8)\le 4-8(x-4)$. Write the solution in interval notation.

A) $(-\infty,3)$

B) $(\infty,-3)$

C) $(-\infty,3]$

D) $(3,\infty)$

E) $[3,\infty)$

107. Solve the following compound inequality. Write the solution in interval notation.

$2x<2$ and $x+11>5$

A) $(-6,1)$

B) $[-6,1]$

C) $[-6,2]$

D) $\varnothing$

E) $(-6,2)$

108. Solve the following compound inequality. Write the solution in interval notation.

$x+4\ge 6$ or $2x\le 2$

A) $(-\infty,1)\cup(2,\infty)$

B) $[1,2]$

C) $(-\infty,1]\cup[2,\infty)$

D) $\varnothing$

E) $(1,2)$

109. Solve the following compound inequality. Write the solution in interval notation.

$-2x>6$ and $x+2>5$

A) $(-\infty,-3]\cup[3,\infty)$

B) $[-3,3]$

C) $\varnothing$

D) $(-\infty,-3)\cup(3,\infty)$

E) $(-3,3)$

110. Solve the following compound inequality. Write the solution in set-builder notation.
$6x+3<9$ or $6x-4>14$

A) $\{x \mid x>1\}$
B) The set of real numbers
C) $\varnothing$
D) $\{x \mid x<1 \text{ or } x>3\}$
E) $\{x \mid 1<x<3\}$

111. Solve the following compound inequality. Write the solution in set-builder notation.
$5<2x+7<13$

A) $\{x \mid x>-1\}$
B) $\varnothing$
C) The set of real numbers
D) $\{x \mid -1<x<3\}$
E) $\{x \mid x<-1 \text{ or } x>3\}$

112. Solve the following compound inequality. Write the solution in set-builder notation.
$5x-6>19$ or $6x-2\le -18$

A) The set of real numbers
B) $\left\{x \middle| x>5 \text{ or } x\le -\frac{8}{3}\right\}$
C) $\varnothing$
D) $\left\{x \middle| \frac{8}{3}\le x<5\right\}$
E) $\left\{x \middle| -\frac{8}{3}\le x<5\right\}$

113. Solve the following compound inequality. Write the solution in interval notation.
$8x-6<10$ and $3x-9>9$

A) $(-\infty,2]\cup[6,\infty)$
B) $(2,6)$
C) $(-\infty,2)\cup(6,\infty)$
D) $\varnothing$
E) $[2,6]$

114. Solve the following compound inequality. Write the solution in interval notation.
$3x-3<9$ or $4x+9\geq 1$

A) $(-\infty,-2)\cup(4,\infty)$

B) $\varnothing$

C) $(-2,4)$

D) $[-2,4]$

E) The set of real numbers

115. Solve the following compound inequality. Write the solution in set-builder notation.
$3-4x>27$ and $2x+7>-17$

A) $\varnothing$

B) $\{x \mid x<-12 \text{ or } x>-6\}$

C) The set of real numbers

D) $\{x \mid -12<x<-6\}$

E) $\{x \mid x>-12\}$

116. Solve the following compound inequality. Write the solution in set-builder notation.
$6-4x\leq 26$ and $3-3x>6$

A) $\{x \mid -5\leq x<-1\}$

B) $\varnothing$

C) The set of real numbers

D) $\{x \mid -5<x<-1\}$

E) $\{x \mid -5<x\leq -1\}$

117. The length of a rectangle is two feet more than four times the width. Expressing the answer as an integer, find the maximum width of the rectangle when the perimeter is less than thirty-two feet.

A) 6 ft

B) 3 ft

C) 4 ft

D) 2 ft

E) 5 ft

118. Is $x = -8$ a solution of the equation $|4x-4| = 36$?

A) No

B) Yes

119. Solve $|x| = -10$.

A) 10
B) –10
C) No solution
D) Both A and B
E) 20

120. Solve $|x| = 2$.

A) 2
B) –2
C) No solution
D) Both A and B
E) 4

121. Solve $|-y| = 5$.

A) No solution
B) –5
C) 5
D) Both B and C
E) 10

122. Solve $|x| > 3$.

A) The set of real numbers
B) $\varnothing$
C) $\{x \mid -3 < x < 3\}$
D) $\{x \mid x > 3 \text{ or } x < -3\}$
E) $\{x \mid -3 \le x \le 3\}$

123. Solve $|x + 7| = 14$.

A) 7
B) –21
C) 9
D) Both B and C
E) Both A and B

124. Solve $|y-8| = 11$.

A) 20
B) –3
C) 19
D) Both B and C
E) Both A and B

125. Solve $|y-10| = 0$.

A) –10
B) 0
C) 10
D) Both B and C
E) Both A and B

126. Solve $|x-5| = -7$.

A) No solution
B) –2
C) 12
D) Both B and C
E) 13

127. Solve $|2-6x| = 10$.

A) $-\frac{4}{3}$
B) 2
C) $\frac{4}{3}$
D) Both A and B
E) Both A and C

128. Solve $|x-6|-6=10$.

A) 10
B) 22
C) –10
D) Both A and C
E) Both B and C

129. Solve $|3a+4|-5=5$.

A) $-\frac{14}{3}$

B) $\frac{14}{3}$

C) 2

D) Both A and C

E) Both A and B

130. Solve $|10x-4|-4=8$.

A) $-\frac{4}{5}$

B) $\frac{8}{5}$

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

D) Both A and B

E) Both B and C

131. Solve $14-|2x-8| = 6$.

A) 8

B) 0

C) –8

D) Both A and B

E) Both A and C

132. Solve $|4 - 7x|+2 = 6$.

A) $-\frac{8}{7}$

B) $\frac{8}{7}$

C) 0

D) Both A and B

E) Both B and C

133. Solve $8 - |5x+6| = 5$.

A) $-\frac{3}{5}$

B) 0

C) $-\frac{9}{5}$

D) Both A and B

E) Both A and C

134. Solve $|x+4| > 4$.

A) The set of real numbers

B) $\varnothing$

C) $\{x \mid x \geq 0 \text{ or } x \leq -8\}$

D) $\{x \mid x > 0 \text{ or } x < -8\}$

E) $\{x \mid -8 < x < 0\}$

135. Solve $|x-5| > 2$.

A) $\{x \mid x \geq 7 \text{ or } x \leq 3\}$

B) $\varnothing$

C) The set of real numbers

D) $\{x \mid x > 7 \text{ or } x < 3\}$

E) $\{x \mid 3 < x < 7\}$

136. Solve $|4-x| \geq 8$.

A) $\varnothing$

B) $\{x \mid x \geq 12 \text{ or } x \leq -4\}$

C) The set of real numbers

D) $\{x \mid -4 < x < 12\}$

E) $\{x \mid x > 12 \text{ or } x < -4\}$

137. Solve $|4x-3| < 9$.

A) $\left\{x \middle| -\frac{3}{2} < x < 3\right\}$

B) $\left\{x \middle| -\frac{3}{2} \le x \le 3\right\}$

C) $\varnothing$

D) The set of real numbers

E) $\left\{x \middle| x < -\frac{3}{2} \text{ or } x > 3\right\}$

138. Solve $|7x+3| > 38$.

A) $\left\{x \middle| -\frac{41}{7} < x < 5\right\}$

B) The set of real numbers

C) $\varnothing$

D) $\left\{x \middle| x < -\frac{41}{7} \text{ or } x > 5\right\}$

E) $\left\{x \middle| -\frac{41}{7} \le x \le 5\right\}$

139. Solve $|5x-3| \le -13$.

A) $\varnothing$

B) $\left\{x \middle| x \le -2 \text{ or } x \ge \frac{16}{5}\right\}$

C) The set of real numbers

D) $\left\{x \middle| -2 \le x \le \frac{16}{5}\right\}$

E) $\left\{x \middle| x < -2 \text{ or } x > \frac{16}{5}\right\}$

140. Solve $|5x-3| > -12$.

A) $\left\{x \middle| -\frac{9}{5} < x < 3\right\}$

B) $\left\{x \middle| -\frac{9}{5} \le x \le 3\right\}$

C) $\varnothing$

D) The set of real numbers

E) $\left\{x \middle| x < -\frac{9}{5} \text{ or } x > 3\right\}$

141. Solve $|11x-8| \le 52$.

A) $\left\{x \middle| -4 \le x \le \frac{60}{11}\right\}$

B) $\varnothing$

C) The set of real numbers

D) $\left\{x \middle| x \le -4 \text{ or } x \ge \frac{60}{11}\right\}$

E) $\left\{x \middle| x < -4 \text{ or } x > \frac{60}{11}\right\}$

142. Solve $|4x-3|+4 < 16$.

A) The set of real numbers

B) $\left\{x \middle| -\frac{9}{4} \le x \le \frac{15}{4}\right\}$

C) $\varnothing$

D) $\left\{x \middle| x < -\frac{9}{4} \text{ or } x > \frac{15}{4}\right\}$

E) $\left\{x \middle| -\frac{9}{4} < x < \frac{15}{4}\right\}$

143. Solve $11 - |2x - 5| < 6$.

A) $\{x \mid -5 < x < 0\}$

B) $\varnothing$

C) $\{x \mid x < -5 \text{ or } x > 0\}$

D) $\{x \mid 0 < x < 5\}$

E) $\{x \mid x > 5 \text{ or } x < 0\}$

144. The diameter of a bushing is 3.25 in. The bushing has a tolerance of 0.008 in. Find the lower and upper limits of the diameter of the bushing.

A) 3.241 in.; 3.258 in.

B) 3.241 in.; 3.259 in.

C) 3.242 in.; 3.259 in.

D) 3.243 in.; 3.257 in.

E) 3.242 in.; 3.258 in.

145. A piston rod for an automobile is $8\frac{3}{4}$ in. long with a tolerance of $\frac{3}{32}$ in. Find the lower and upper limits of the length of the piston rod.

A) $8\frac{5}{8}$ in.; $8\frac{27}{32}$ in.

B) $8\frac{11}{16}$ in.; $8\frac{7}{8}$ in.

C) $8\frac{21}{32}$ in.; $8\frac{27}{32}$ in.

D) $8\frac{21}{32}$ in.; $8\frac{13}{16}$ in.

E) $8\frac{5}{8}$ in.; $8\frac{13}{16}$ in.

146. Find the lower and upper limits of a 17,000-ohm resistor with a 10% tolerance.

A) 15,500 ohms; 18,900 ohms

B) 15,300 ohms; 18,700 ohms

C) 15,400 ohms; 18,800 ohms

D) 15,300 ohms; 18,800 ohms

E) 15,400 ohms; 18,700 ohms

Answer Key

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

45. A
46. B
47. B
48. C
49. E
50. A
51. B
52. B
53. C
54. A
55. E
56. A
57. B
58. A
59. D
60. D
61. B
62. C
63. C
64. E
65. A
66. C
67. B
68. C
69. D
70. A
71. C
72. C
73. C
74. C
75. E
76. E
77. A
78. D
79. B
80. C
81. D
82. A
83. E
84. B
85. C
86. C
87. C
88. D
89. B
90. B

91. A
92. D
93. B
94. B
95. B
96. A
97. C
98. D
99. A
100. D
101. A
102. C
103. E
104. D
105. B
106. C
107. A
108. C
109. C
110. D
111. D
112. B
113. D
114. E
115. D
116. A
117. D
118. B
119. C
120. D
121. D
122. D
123. E
124. D
125. C
126. A
127. D
128. E
129. D
130. D
131. D
132. E
133. E
134. D
135. D
136. B

137. A
138. D
139. A
140. D
141. A
142. E
143. E
144. E
145. C
146. B