Summer Math Skills for 7th Grade going into 8th Grade (Must Show All Work and Attach Scrap paper for Full Credit)

Evaluate the expression for the given value(s) of the variables(s).

1. m-8 when m = 12

2. 11y when y = 5

3. a + (b-1) when a = 21 and b = 7

Evaluate the expression.

4. 23 - (9 - 5)

5. $\frac{17-8}{6+12}$

6. 52 x (13 x 3)

7. -5 x 8 x (1/5)

8. 1/3 (1.3) - 1/3 (1.7)

9. 5^2 - 16 x 3

10. 9.83 + (8.2)(7.01)

Find the sum, difference, product, or quotient.

11. 3.24 + 5.48

12. 21.73 - 14.87

13. 2.4 x 0.125

14. 15.3 - 0.09

15. $\frac{11}{16} - \frac{3}{4}$

16. $7\frac{2}{5} - 4\frac{7}{10}$

17. $2\frac{1}{3} \times 3\frac{3}{4}$

18. $\frac{7}{12} - \frac{14}{15}$

19. -11 + (-17)

20. 21 - 32

21. 10 (-3)

22. -54 + (-6)

Write the Number in Scientific Notation.

23. 61,500

24. 17,540,000

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

25. 7 less than a number is 15.

26. 3 times the sum of a number and 2 is 12.

Simplify the Expression.

27. 4x - 8 -7x - 3

28. 17t + 3 (4t - 5)

29. 5 (3m+1) - 8(2m +3)

30. -3 - 4b + b -8

Solve the equation. Check your solution.

31. $w - 4 = -2$

32. $\frac{2}{3}x = -10$

33. $4y - 2 = 7$

34. $-9 - -9(2a - 3)$

Solve the inequality.

35. $15 > m \cdot 8$

36. $-7x \leq 21$

Solve the proportion.

37. $\frac{x}{15} = \frac{3}{7.5}$

38. $\frac{12}{16} = \frac{y}{12}$

39. A map uses a scale of 1in :25 mi. If the distance between the two cities on the map is 3.5 inches, what is the actual distance between the cities?

Write the percent as a decimal or the decimal as a percent.

40. 31.5%

41. 210%

42. 0.0125

43. What number is 45% of 520?

44. 75 is what percent of 30?

Identify the percent of change as an increase or a decrease. Then find the percent of change.

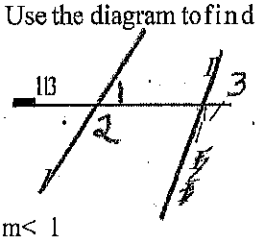
45. Original: 60
New: 45

46. Original: 75
New: 90

47. A store has a pair of boots that originally cost $56 marked down 25%. How much will the boots cost on sale?

48. You deposit $1200 in an account. The annual interest rate is 3%. How long will it take you to earn $108 in simple interest?

Use the diagram to find the unknown angle measures.

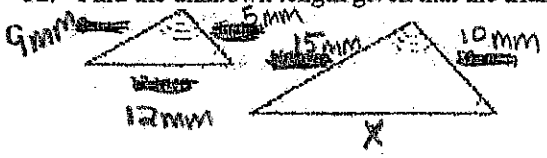


49. m< 1

50. m<2

51. m<3

52. Find the unknown length given that the triangles are similar.



53. The shadow cast by a house is 55 feet long. At the same time, a flagpole that is 15 feet tall casts a 25 foot long shadow. How tall is the house?

Evaluate the expression when x = 3 and y = 15.

54. $-\sqrt{12x}$

55. $\sqrt{y} - 2x \div 7$

Solve the equations.

56. $x^2 - 16 = 48$

57. $2x^2 - 7 = 68$

58. $15 + C = -3$

59. $\frac{3}{4}x = 12$

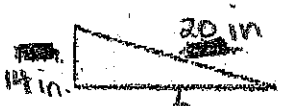
60. $4 + t^2 = 68$

Find the unknown length. (Hint: Pythagorean Theorem) Round to the nearest tenth if necessary.

61.

Type equation here.

62.



Evaluate the expression for the given value of the variable.

63. skip

64. $12 - x + 7$, when $x=5$

65. A rectangular garden has a length of 10.25 feet and a width of 6.2 feet. Another rectangular garden has a length of 20.5 feet and a width of 12.4 feet. How many times greater is the area of the larger garden than the area of the smaller garden?

Find the quotient.

66. Evaluate the expression when $a = -5$, $b = 7$, $c = -2$, and $d = 3.2$.

67. $a^2 - b + [4.7 - d] - c$

Solve the following proportion problem.

68. You can walk 2 miles in 24 minutes. How long will it take you to walk 5 miles?

69. Your bill at a restaurant comes to $56. You want to leave a 15% tip. How much should you leave?

Find the circumference and area of the circle. Use 3.14 for pi.

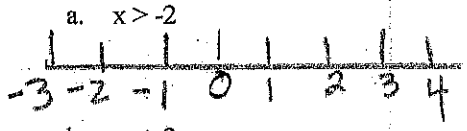
70. 

diameter = 11in.

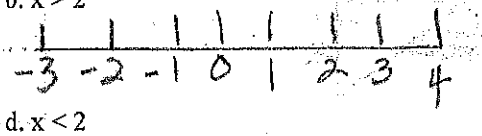
Solve the inequality. Then graph its solution.

71. [redacted] $6x - 8 < -20$

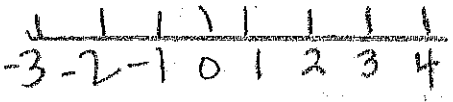
a. $x > -2$



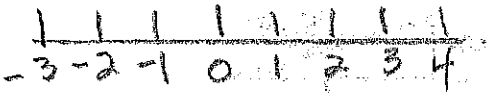
b. $x > 2$



b. $x < -2$



d. $x < 2$



72. [redacted] $-\frac{x}{7} \leq 8$

73. $\frac{x}{9} < 9$

Evaluate the expression when $a = -6$, $b = -13$ and $c = 4$

74. $-13 + c + b$

a. -15

b) -22

c) -1

d) 1

76. $a \cdot -5 \div 3$

77. Susan owns a small business. There was a loss of \$11 on Monday and a profit of \$18 on Tuesday. On Wednesday, there was a loss of \$7, and on Thursday, there was a profit of \$8. Find the total profit or loss.
   a. \$13 loss
   b. \$8 profit
   c. \$44 profit
   d. \$18 profit

78. The Badgers played football against the Raiders. The Badgers had a gain of 7 yards on their first play and a loss of 15 yards on their second play. On the third play there was a loss of 18 yards. Find tlie total gain or loss for the 3 plays.

Find the difference.

79. $-26 - (-9)$

80. $-24 - (-10)$

Find the temperature change.

81. From -13°C to 15°C.
   a. -28°C

   b. -2°C

   c. 28°C

   d. 2°C

82. From -4 °F to – 20 °F.

Evaluate the expression when $x = -4$, $Y = 13$, and $z = -9$.

83. $-5 - x - z$

Evaluate the expression for the given values of the variables.

84. $-c - p$, when $c = -33$ and $p = 20$

Find the quotient.

85. $-272 \div -8$

86. $\frac{x}{y}$, *when* $x = -72$ *and* $y = -2$

87. A deep-sea diver must descend and ascend in short steps to equalize pressure on her body. If the diver rises toward the surface too quickly, she may suffer from a physical condition called "the bends." Suppose the diver descends to the bottom in 1Jiree steps of 12 feet each. Write and simplify an expression to describe the diver's change in elevation.

88. Kaye runs a small business with three employees. She pays one employee $2300 a month, another $1700 a month, and the third $1400 a mouth. How much does she pay her employees in a year?

a. $31,900
C. $30,700
b. $63,600
d. $64,800

Use the distributive property to write an equivalent variable expression.

89. 4(x + 3)

a. 4x + 12
c. 4x + 3
b. 4x - 12
d. 7x + 3

90. You and three friends go to a movie. The tickets cost $5.50 each. You each buy a drink for $2.50 and a box of popcorn for $4.00. Write an expression that represents the total amount of money spent. Then evaluate the expression.

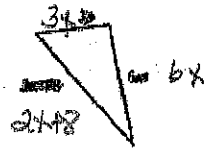
91. -4(x + 3)

Simplify the expression.

92. 7- 7(5 + x) – 9x

93. 4 + 10x +5 – 5x

94. Write and simplify an expression for the perimeter of the figure. (The figure may not be drawn to scale.)



Solve the equation. Check your solution.

95. $s - 45 = 127$

96. $164 = x - 59$

Solve the equation.

97. $14x = -728$

a. $-\frac{1}{52}$

b. $\frac{1}{52}$

c. 52

d. -52

98. $\frac{t}{3} = 9$

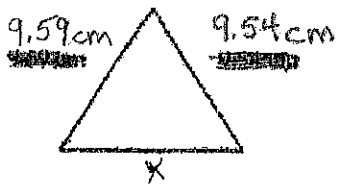
99. $7x = 182$

100. $\frac{x}{4} = 23$

101. $4x = 24$

102. $\frac{c}{24} = 19$

103. The perimeter of the figure is 28.01 centimeters. Find the value of x.



Solve the equation. Check your solution.

104. $-x + 6 = 8$

105. $-\frac{q}{4} + 3 = 12$