

Student's Name \_\_\_\_\_

**Summer Packet for Students entering Algebra I**

**Show all work. No credit will be given unless work is shown.  
All of the problems in your summer packet must include the work  
and must be completed without the use of a calculator.**

**ARITHMETIC with FRACTIONS (give the answer reduced to lowest form)**

**EXAMPLE:.**  $7\frac{3}{10} + 6\frac{2}{3}$   
 $= 7\frac{9}{30} + 6\frac{20}{30}$   
 $= 13\frac{29}{30}$  or  $\frac{419}{30}$

1.  $1\frac{2}{3} + 1\frac{1}{5}$

2.  $8\frac{1}{4} + 4\frac{6}{7}$

3.  $5\frac{3}{7} + 5\frac{5}{8}$

4.  $4\frac{3}{4} + 3\frac{2}{3}$

5.  $6\frac{3}{4} + 8\frac{2}{3}$

6.  $5\frac{1}{6} - 2\frac{1}{3}$

7.  $6\frac{6}{7} - 4\frac{4}{9}$

8.  $2\frac{2}{9} - 1\frac{4}{5}$

9.  $8\frac{1}{3} - 5\frac{1}{8}$

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10.  $3\frac{2}{5} + 4\frac{13}{20} - 5\frac{1}{4}$

11.  $4\frac{1}{5} + 5\frac{1}{30} - 3\frac{1}{6}$

12.  $3\frac{1}{4} + 4\frac{11}{12} - 4\frac{1}{3}$

13.  $2\frac{1}{2} + 3\frac{5}{6} - 4\frac{1}{4}$

14.  $5\frac{3}{5} + 5\frac{7}{10} - 2\frac{1}{4}$

15.  $\frac{2}{3} \times \frac{4}{5} \times \frac{1}{6}$

16.  $4\frac{1}{3} \times 1\frac{2}{9} \times 6\frac{3}{8}$

17.  $5\frac{1}{3} \div 1\frac{1}{3}$

18.  $\frac{12}{23} \div \frac{3}{46}$

19.  $\frac{5\frac{4}{5}}{9\frac{2}{3}}$

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**Arithmetic with Decimals:**

20.  $.35 + .0976 + 3.6$

21.  $.007 + 38 + 2.19$

22.  $5.34 - 3.83$

23.  $8.36 - 7.5$

24.  $7.4 - 3.68$

25.  $7 - 3.46$

26.  $.017 \times .8$

27.  $.328 \times .53$

28.  $62 \times .00005$

29.  $.0036 \times .13$

30.  $.3621 \div .03$

31.  $689.6 \div .4$

32.  $148.4 \div .28$

33.  $1.353 \div .52$

34.  $10.73 \div 4.3$   
(round answer to nearest tenth)

35.  $38 \div 6$   
(round to nearest tenth)

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**VOCABULARY:**

36. What is the result of a division problem called?

37. What is the result of an addition problem called?

38. What is the result of a subtraction problem called?

39. What is the result of a multiplication problem called?

40. Round this number to the nearest whole number:

43.3219

41. Round this number to the nearest tenth:

419.1567

42. What real number does not have a reciprocal?

43.  $\{0, 1, 2, 3, 4, 5, \dots\}$  designates the set of \_\_\_\_\_?

- A. natural numbers
- B. rational numbers
- C. integers
- D. whole numbers

44. Use braces and digits to designate the set of natural numbers.

45. Use braces and digits to designate the set of integers.

46. What is another name for the set of natural numbers?

**USE UNIT MULTIPLIERS to change from one measurement standard to another:**

**EXAMPLE:**

Change 25 feet to centimeters

$$25ft \left( \frac{12in}{1ft} \right) \left( \frac{2.54cm}{1in} \right) =$$

$$(25)(12)(2.54) = 762 \text{ cm}$$

47. Use two unit multipliers to convert 30 centimeters to kilometers.

48. Use three unit multipliers to convert 23 feet to meters.

49. Use two unit multipliers to convert 50 meters to inches.

50. Use two unit multipliers to convert 32 square inches to square centimeters.

51. Use four unit multipliers to convert 137 square inches to square yards.

52. Use three unit multipliers to convert 23 feet to meters.

53. Use two unit multipliers to convert 30 meters to inches.

54. Use unit multipliers to convert 9 yards to inches.

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**SIGNED NUMBER arithmetic and absolute value:**  
**(Obey order of operations: P.E.M.D.A.S.!)**

**EXAMPLE:**

$$\begin{aligned} 7 - 9 - (-3) - [ -(-1) ] + | -3 | &= \\ 7 - 9 + 3 - [+1] + 3 &= \\ -2 + 3 - 1 + 3 &= \\ 1 - 1 + 3 &= 3 \end{aligned}$$

55.  $(-5) + (+4) + (-3) =$

56.  $-(-8) - 4(6 - 5) =$

57.  $(7)(4)(-6)(-2) =$

58.  $4 + 2 \cdot 3 - 5 =$

59.  $-3(-3) + 3(-7) + 3 - 8 =$

60.  $(-1)(5) + (1 - 7)(4 - 3) + |6 - 2 - 4| =$

61.  $(-7)(-9) =$

62.  $(-8)(-5) =$

63.  $\frac{-72}{9} =$

64.  $| -6.9 | =$

65.  $|12 + (-17)| =$

66.  $-6 + 5 + 7 - 20 + 6 - 20 + 19 =$

67.  $-|4 + 3| - 3 + 3 =$

68.  $5(3+9) - 3(-4 - 2) =$

69.  $3 + \frac{(18)}{(-9)} - 8 =$

70.  $\frac{-1 - 2 - 5(-3)}{4(-2) + (7)(-6)} =$

71.  $\frac{-4(-1 + 3) + (-2 - 1)}{-8 + (-2)(-5)} =$

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**Convert fractions to decimals and/or percents:**

Fraction	Decimal	Percent
Example: $\frac{1}{2}$	<b>.50</b>	<b>50%</b>
$\frac{4}{5}$	72	73
74.	<b>.75</b>	75.
76	77	<b><math>33\frac{1}{3}\%</math></b>
78	<b>.375</b>	79
80.	81	<b>112%</b>

**Solve the following questions based on fractions, decimals and percentages:****82. 12 is what percent of 64?****83. What is 25% of 400?****84. 17 is what fraction of 51?****85.  $\frac{4}{9}$  of 81 is what number?**

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86. A jar contained 300 marbles. There were 50 blue marbles. There were twice as many red marbles as blue. The rest of the marbles were yellow. How many marbles were yellow?

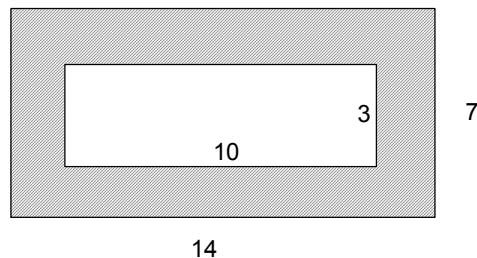
87. A lady bought a coat that was on sale. The sale was for 25% off the price of the coat. She paid \$144 for the coat. What was the original price of her coat?

88. There are 12 boys and 18 girls in the class. What percentage of the class is girls?

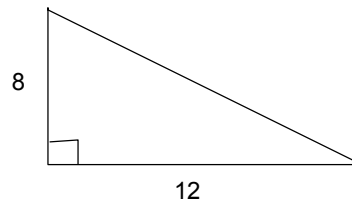
Simple geometry calculations:

89. Find the perimeter of a rectangle that measures 7 inches long and 5 inches wide.

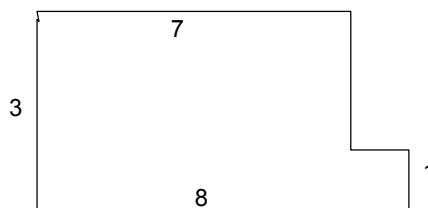
90. Find the area of the shaded portion: all angles are right angles. Dimensions are in meters.



91. Find the area of this right triangle:



92. Find the perimeter of this figure (angles are right angles, and the dimensions are in feet).



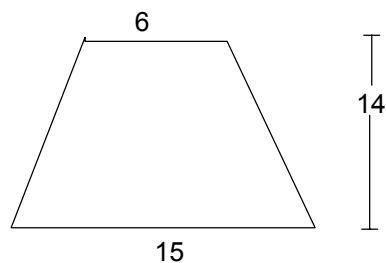
93. Find the area of the figure to the right:

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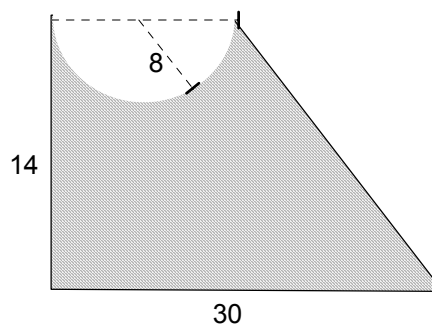
94. The radius of a circle is 15 inches. Find the area of this circle, using 3.14 for  $\pi$ .

95. The circumference of a circle is  $10\pi$  feet.  
What is the radius of this circle?

96. Find the area of this trapezoid  
(dimensions are in inches).



97. Find the shaded area in this figure:  
(A semicircle has been taken away from  
a trapezoid! Dimensions are in centimeters.)



**USING VARIABLES in Algebra:**

98. Add like terms:  $2x + 3y - 5x + 7y =$

99. What is X:  $3x + 2 = 26$ ?

100. Twice a number was increased by 5 and the result was 11.  
Write an equation and then solve it. What was the number?

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**Solve these proportion problems:**

101.  $\frac{N}{3} = \frac{5}{7}$

102.  $\frac{4}{X} = \frac{12}{9}$

103.  $\frac{2\frac{1}{2}}{\frac{1}{3}} = \frac{\frac{4}{5}}{N}$

104.  $\frac{\frac{3}{5}}{\frac{1}{2}} = \frac{N}{\frac{4}{3}}$

105.  $\frac{315}{25} = \frac{63}{N}$

**Solve these one-step equations:**

106.  $X + 4 = 7$

107.  $\frac{2}{3}X = \frac{5}{6}$

108.  $X + \frac{7}{8} = \frac{9}{16}$

109.  $2\frac{1}{3}X = \frac{3}{5}$

110.  $\frac{X}{5} = 4.2$