

**Summer Math Work**  
**Algebra 1 - Grade 8**  
**No calculators**

Name \_\_\_\_\_

1.  $\frac{123}{4}$  is equal to:  
A)  $3\frac{3}{4}$                       B)  $30\frac{3}{4}$                       C)  $30\frac{4}{3}$                       D)  $3\frac{4}{3}$
2. The least common denominator between  $\frac{1}{36}$  and  $\frac{3}{8}$  is:  
A) 4                      B) 36                      C) 72                      D) 288
3. 40 is what percent of 800?  
A) 5%                      B) 0.05%                      C) 15%                      D) 20%
4. Find the prime factorization of 252.
5. Simplify each expression.
- a)  $18 \div 6(-3) - 5$                       b)  $|3 - 12| + (6 - 2)^2$
- c)  $\left(-\frac{2}{3}\right)^2 - \frac{5}{9}$                       d)  $\frac{\frac{3}{4} + \frac{3}{5}}{2\frac{1}{4}}$

6. Evaluate  $10a^2 - (ab + c)$  for  $a = -2$ ,  $b = 3$ , and  $c = -1$ . Use parenthesis when substituting the values for the letters.

7. Combine like terms.

a)  $5x - y - x - 4y$

Distribute, then combine like terms.

b)  $-2(4 - n) - 7n - 1$

c)  $\frac{21}{36}a + \frac{2}{3} - \frac{5}{12}a + \frac{1}{12}$

8. Solve each equation.

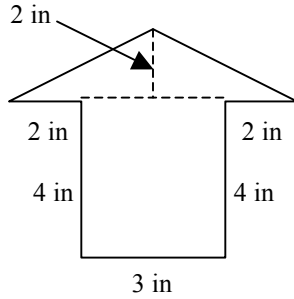
a)  $3x - 12 = 5x$

b)  $x - 3(x + 6) = 1 - x + 5$

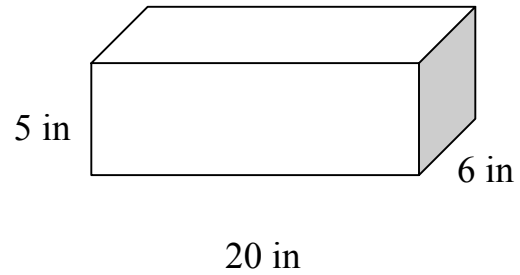
c)  $\frac{-2}{3}x = 5$

d)  $2x - \frac{3}{4} = \frac{1}{8} - 5x$

9. Find the area of the shape below. Remember to include units in the final answer.



10. Find the volume of the following box.



11. The length of a rectangular room is  $1\frac{2}{3}$  ft more than its width and its perimeter is 46ft.  
Find the length and width of the room.

12. You need  $2\frac{1}{3}$  yards of fabric to make one curtain. Estimate how many curtains can you make out of  $21\frac{1}{2}$  yards of fabric?

Find the exact answer:

13. Solve each system of equation below by the indicated method

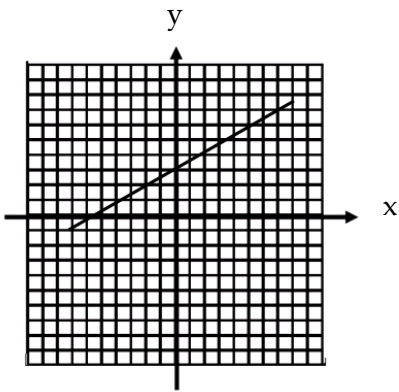
Elimination

$$\begin{cases} 3x - 5y = 7 \\ 2x + 3y = 30 \end{cases}$$

Substitution

$$\begin{cases} x + 2y = 21 \\ y = 3x \end{cases}$$

14. What kind of an equation has the graph below?



Find the slope

Find the y intercept

Find the rule

15. Calculate the amount of interest on a four-year loan of \$5000 with:

a) Simple interest at 8% interest rate.

b) Compound interest at 7% interest rate.