

## Solving Simple Equations with Rational Numbers

Here we are solving for the variable by “undoing” the problem one step at a time.

EXAMPLE:  $\frac{1}{2}x = 6$   $\rightarrow$  original problem

$$\frac{1}{2}x \div \frac{1}{2} = \frac{6}{1} \div \frac{1}{2} \rightarrow \text{undo the “multiply by } \_ \text{” with a “divide by } \_ \text{”}$$

$$\frac{1}{2}x * \frac{2}{1} = \frac{6}{1} * \frac{2}{1} \rightarrow \text{change division to inverse multiplication}$$

$$\cancel{\frac{1 * 2}{2 * 1}} x = \frac{6 * 2}{1 * 1} = \rightarrow \text{do the multiplication,}$$

$$x = 12$$

finding the answer for x

The same skills would be used if you were looking at decimals or percents

EXAMPLE:  $(.7)c = 2.1$  original problem  
 $(.7)c / .7 = 2.1 / .7$  “undo” multiplication of (.7) with division by (.7)  
 $(.7)/(.7)c = 2.1 / .7$  the “undo” causes the (.7)/(.7) into 1, leaving “c”  
 $c = 3$  finding the answer

Solve these problems using the “undo” technique

1)  $\frac{1}{3}h = 15$

2)  $(.5)v = .25$

3) 15% of 3 =

4)  $k - \frac{3}{4} = 1\frac{1}{2}$

5)  $m - .005 = 1.3$

6) 35% of R = 7

7)  $\frac{7}{6}p = 42$

8)  $\frac{y}{2.4} = 8$

9) .6% of C = 6