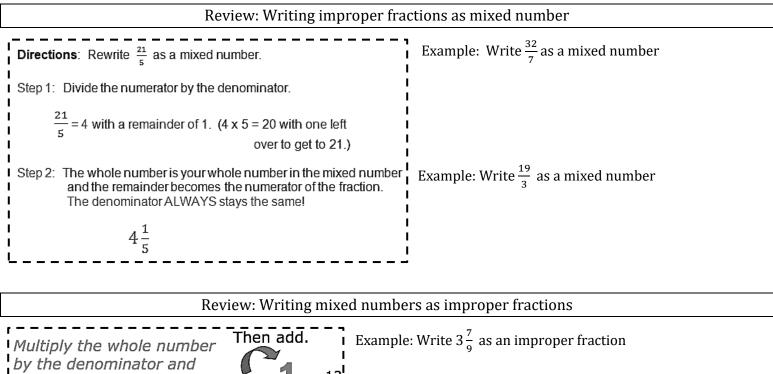
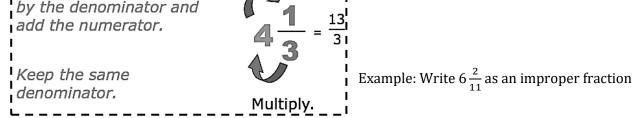
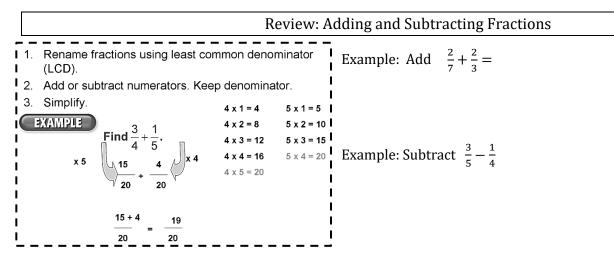
Solving Equations







Solving one-step equations:			
One Step Addition Example	ONE STEP SUBTRACTION EXAMPLE	Multiplication Example	One Step Division Example
The Opposite of Addition is Subtraction y + 14 = 20 -14 - 14 $y = 6 \checkmark$ The value which makes the equation true is 6.	The Opposite of Subtraction is Addition X - 120 = 80 +120 + 120 $X = 200 \checkmark$ The value which makes the equation true is 200.	The Opposite of Multiplication is Division 3n = 12 $\frac{\varnothing n}{\Im} = \frac{12}{3}$ $\frac{3/3 \text{ cancels down}}{\text{ to become } 1/1 = 1}$ $n = 4 \sqrt{1n \text{ is simply "n"}}$ The value which makes the equation true is 4.	$\label{eq:constraint} \begin{array}{c} \mbox{The Opposite of Division is Multiplication.} \\ \hline k &= 16 & \mbox{K is divided by 2,} \\ \hline 2 & \mbox{so we need to multiply} \\ \hline both sides by 2 \\ \hline k & \mbox{X} &= 16 \times 2 & \mbox{2/2 cancels down} \\ \hline 2 & \mbox{to become 1/1 + 1} \\ \hline k &= 32 & & \mbox{1k is simply "k"} \end{array}$

a.) Solve a + 14 = -3 for *a*

Solving multi-step equations:

- 1. Combine all like terms onto one side of the equation
- 2. Isolate the term with the variable you are solving for
- 3. Use "opposite operations" to get the variable by itself
- 4. Plug your answer back into the problem to make sure it works!

Examples: Solve the following for the variable.

d.) 7x - 41 = -13

e.) 7x + 13 = 9x - 5

f.) $\frac{x}{2} + 3 = 5$

g.) 7(x+4) = 84

h.) 12 + 2b = -2(b - 2)

i.) 7(x-2) = -x - 14

j.)
$$\frac{1}{2}(6x-4) = 7x$$
 k.) $\frac{1}{2}x - 3 = 2 - \frac{3}{4}x$

l.) $-\frac{3}{4}x + \frac{1}{4} = \frac{1}{2}$ m.) 5 + 4x - 7 = 4x - 2 - x

Lets practice some basic simplification. Simplify the following.

0.)
$$(3-6) - (5-7)$$
 p.) $\left(-\frac{1}{2}\right)^3 - \frac{2}{3}$

q.) $-1\frac{2}{9}+6\frac{5}{6}$

r.) 3.53 – 4.27