

# Day 7: 2-Step Linear Equations

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## AW Math 11

### Day 7: Solving 2-Step Linear Equations class notes

Step 1: Clean-up / Simplify

1) eg.  $3x + 5x - 2 = 9$   $\rightarrow 8x - 2 = 9$

2) eg.  $3(p+7) = 20$   $\rightarrow 3p + 21 = 20$

Step 2: Re organize

1)  $8x - 2 = 9$   
 $+2 \quad +2$   
 $8x = 11$

2)  $3p + 21 = 20$   
 $-21 \quad -21$   
 $3p = -1$

Step 3: Isolate

$\frac{8x}{8} = \frac{11}{8}$   
 $x = \frac{11}{8}$  or  $1.38$

$\frac{3p}{3} = \frac{-1}{3}$   
 $p = \frac{-1}{3}$  or  $-0.33\bar{3}$

~~Sign rule review~~

# AW Math 11

Examples (Practice) below: Solve for the unknown variable. Show ALL algebra steps.

$1) \begin{array}{r} 2e - 1 = 7 \\ +1 \quad +1 \\ \hline 2e = 8 \\ \frac{2e}{2} = \frac{8}{2} \\ \hline e = 4 \end{array}$	$2) \begin{array}{r} 4 + 26g = -48 \\ -4 \quad -4 \\ \hline 26g = -52 \\ \frac{26g}{26} = \frac{-52}{26} \\ \hline g = -2 \end{array}$
$3) \begin{array}{r} \frac{x}{3} + 6 = 18 \\ -6 \quad -6 \\ \hline \frac{x}{3} = 12 \\ \times 3 \quad \times 3 \\ \hline x = 36 \end{array}$	$4) \begin{array}{r} 5(x+3) = 25 \\ 5x + 15 = 25 \\ -15 \quad -15 \\ \hline 5x = 10 \\ \frac{5x}{5} = \frac{10}{5} \\ \hline x = 2 \end{array}$
$5) \begin{array}{r} 4 + 2x = 68 - x \\ +x \quad +x \\ \hline 4 + 3x = 68 \\ -4 \quad -4 \\ \hline 3x = 64 \\ \frac{3x}{3} = \frac{64}{3} \end{array}$ <div style="border: 1px solid black; padding: 5px; display: inline-block; margin-left: 20px;"> <math>x = 21.3</math> </div>	<del><math display="block">x = 3</math></del>

7) A chalet rents for \$150 plus \$5 per person per night. If the group spends \$180, how many people went? Write an equation with a variable and solve.

$$\begin{array}{r} 150 + 5p = 180 \\ -150 \quad -150 \\ \hline 5p = 30 \\ \frac{5p}{5} = \frac{30}{5} \\ \hline p = 6 \end{array}$$

6 people!

1-12 *don't do #9*

**Day 7: Solving 2-Step Linear Equations Assignment**

1.)  $3 + 3x = 33$

2.)  $7x + 8 = 36$

3.)  $-3x + 9 = -3$

4.)  $6x + 1 = 25$

5.)  $\frac{x}{3} - 4 = 12$

6.)  $\frac{n}{12} - 24 = 15$

7.)  $7x + 7 - 2x = 67$

8.)  $-9 + 6x + x = 68$

9.  $\frac{(g+9)}{3} = 8$

10.  $12(y + 5) = 144$

11.  $3y + 46 = 1 + 8y$

12. You decide to do the oil change in your car. The oil filter cost \$8. You also needed 3 jugs of oil. You spend a total of \$48. How much did each jug of oil cost?