Unit 1 Day 8 Notes on Literal Equations Day 2

Key

Let's Warm Up!
Solve for y.

1. $4x+y=10$

$-4x \quad -4x$

$y=-4x+10$

2. $5x-7y=14$

$-5x \quad -5x$

$\frac{-7y}{-7}=\frac{-5x}{-7}+\frac{14}{-7}$

$y=\frac{5}{7}x-2$

3. $4+6y=12x-2$

$-4 \quad -4$

$\frac{6y}{6}=\frac{12x}{6}-\frac{6}{6}$

$y=2x-1$

4. $4y+\frac{1}{3}x+4=18$

$-4 \quad -4$

$-\frac{1}{3}x \quad -\frac{1}{3}x$

$\frac{4y}{4}=\frac{-\frac{1}{3}x}{4}+\frac{14}{4}$

$y=-\frac{1}{12}x+\frac{7}{2}$

Ready for a few word problems?

5. You can find the area of a triangle from the formula $A=\frac{1}{2}bh$. Solve the equation for the base (b).

$2A=(\frac{1}{2}bh)2$

$\frac{2A}{h}=\frac{bh}{h} \Rightarrow$ $b=\frac{2A}{h}$

6. The formula $d=rt$ represents the distance traveled based on rate (speed) and time. Assume you want to identify how long it will take you to travel to Soldier Field for the Bears' home opener on Sunday.

a. Solve the formula (not the equation) for t.

$\frac{d}{r}=\frac{rt}{r}$

$t=\frac{d}{r}$

b. Use your new equation to calculate how long it will take you to get there if the field is 23 miles away and you travel at an average speed of 45 miles per hour.

$t=\frac{23}{45}$

$t=.51$ hours

about 30 min

7. You can calculate your grade in Algebra (A) by finding the average of all of your test scores. If you've taken four tests – T_1, T_2, T_3, T_4, set up an equation to identify your last test score (T_4).

$4 \cdot A=\left(\frac{T_1+T_2+T_3+T_4}{4}\right)\cdot 4$

$4A=T_1+T_2+T_3+T_4$

$-T_1 \quad -T_2 \quad -T_3 \quad -T_1 \quad -T_2 \quad -T_3$

$T_4=4A-T_1-T_2-T_3$