Bellwork: Algebra 1
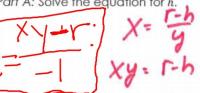
1. Write down your work for the week in your planner.
2. Take out your homework from Friday and be ready to check.
3. You will have 10 minutes to work on the ODD Problems from the notes pages.
4. EXTRA CREDIT OPPORTUNITY: You may do the Check Your Understanding ONLINE through Math Nation for Sections 2.1, 2.2, 2.3, 2.4, and 2.8 by NEXT MONDAY!

1. Consider the following equation, $bh + hr = 25$.

   Part A: Solve the equation for h.

   $bh + hr = 25$

   $h(b+r) = 25$

   $\boxed{h = \dfrac{25}{b+r}}$

   Part B: Solve the equation for r.

   $bh + hr = 25$

   $h(b+r) = 25$

   $b+r = \dfrac{25}{h}$

   $r = \dfrac{25}{h} - b$

   $\boxed{r = \dfrac{25 - bh}{h}}$

2. Consider the following equation $x = \dfrac{r-h}{y}$.

   Part A: Solve the equation for h.

   $x = \dfrac{r-h}{y}$

   $xy = r - h$

   $\boxed{h = \dfrac{xy - r}{-1}}$

   $xy - r = -h$

   $-xy + r = h$

   Part B: Solve the equation for r.

   $x = \dfrac{r-h}{y}$

   $xy = r - h$

   $\boxed{xy + h = r}$

3. Charlize and Camille solved the equation $4x - 2y = 8$ for y. Their work is shown below.

Charlize

$4x - 2y = 8$

$-2y = 8 + 4x$ $-4x$

$y = -4 - 2x$

Camille

$4x - 2y = 8$

$-2y = 8 - 4x$

$y = -4 + 2x$

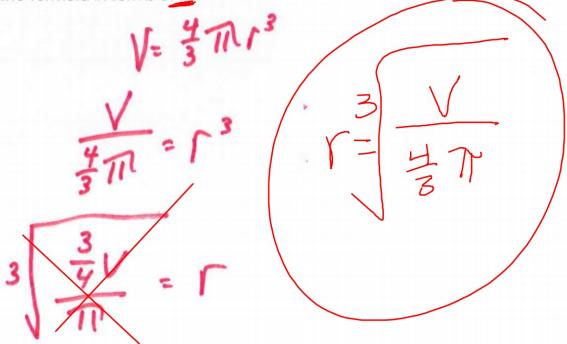Which student solved the equation correctly? Justify your answer.

Camille is correct. Charlie did not switch signs to negative when moving $4x$ to Right side of equal signs

4. Solve the following equation for p.

$2m = \dfrac{p-q}{r}$

$r(2m) = p - q$

$2mr + q = p$

5. The formula to find the volume of a sphere is $V = \frac{4}{3}\pi r^3$, where r is the radius of the sphere. What is the formula in terms of r?

$$V = \frac{4}{3}\pi r^3$$

$$\frac{V}{\frac{4}{3}\pi} = r^3$$

$$\sqrt[3]{\frac{\frac{3}{4}V}{\pi}} = r$$

$$r = \sqrt[3]{\frac{V}{\frac{4}{3}\pi}}$$

Main Ideas/Questions	Notes/Examples
Literal Equations	
	SOLVE EACH OF THE EQUATIONS BELOW FOR x:
	$2x - 5 = 13$
	$ax - b = c$

Quick Write	Identify the similarities and differences between the two equations:
	_____
	_____
	_____
	_____

1. $A = lw$ solve for w $\dfrac{A}{l} = \dfrac{lw}{l}$ $W = \dfrac{A}{l}$	**2.** $A = bh$ solve for h
3. $d = rt$ solve for t $\dfrac{d}{r} = \dfrac{rt}{r}$ $t = \dfrac{d}{r}$	**4.** $I = prt$ solve for t
5. $V = lwh$ solve for h $\dfrac{V}{lw} = \dfrac{lwh}{lw}$ $h = \dfrac{V}{lw}$	**6.** $A = \pi r^2$ solve for r
7. $m = c - s$ solve for c $+s \quad +s$ $\overline{m + s = C}$	**8.** $D = \dfrac{m}{v}$ solve for m

Helpful Hints:

- Think backwards PEMDAS ←
- Remove fractions by multiplying by the reciprocal.
- Last step is USUALLY to divide by whatever is next to your variable.

9. $A = \frac{1}{2}bh$ solve for h $\frac{1}{2}b$ $\frac{1}{2}b$ $h = \frac{A}{\frac{1}{2}b}$	**10.** $V = \frac{1}{3}Bh$ solve for B
11. $K = \frac{mv^2}{2}$ solve for m $\cdot 2$ $\cdot 2$ $\frac{2K}{v^2} = \frac{mv^2}{v^2}$ $m = \frac{2K}{v^2}$	**12.** $a = \frac{b+c}{d}$ solve for b

13. $P = 2L + 2W$ solve for W $-2L\ -2L$ $$\frac{P - 2L}{2} = \frac{2W}{2}$$ $$W = \frac{P - 2L}{2}$$	**14.** $Ax + By = C$ solve for y
15. $y = mx + b$ solve for x $-b\quad\ -b$ $$\frac{y - b}{m} = \frac{mx}{m}$$ $$X = \frac{y - b}{m}$$	**16.** $A = P + Prt$ solve for t
17. $C = \frac{5}{9}(F - 32)$ solve for F $\cdot\frac{9}{5}\qquad \cdot\frac{9}{5}$ $$\frac{9}{5}C = F - 32$$ $$+32$$	**18.** $A = \frac{1}{2}h(b_1 + b_2)$ solve for b_1

$+32$

$$F = \frac{9}{5}C + 32$$