Principles of Algebra Name/Date Clee / Today

ALL PROBLEMS CAN BE COMPLETED ON THIS WORKSHEET

WS 4A.1 – Solving Literal Equations & Formulas

1. The formula to find the area of a triangle is $A = \frac{bh}{2}$. Use this formula to find the base of a triangle with area 42 and height 7. Show your work.

$A = \frac{bh}{2}$

$42 \overset{\cdot 2}{=} \frac{b(7)}{2} \overset{\cdot 2}{\Rightarrow} 84 = 7b$

$b = 12$

The base is 12 units.

2. Solve the formula $A = \frac{bh}{2}$ for b.

$A \overset{\cdot 2}{=} \frac{bh}{2} \cdot 2$

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

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

3. Use the new version of the formula you found in problem #2 to find the base of a triangle with area 42 and height 7. Show your work.

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

$b = \frac{2(42)}{7} = \frac{84}{7} = \boxed{12}$

There was no Algebra involved with this formula. We only needed arithmetic.

#4-9, Solve each equation for the indicated variable.

4. $y = mx + b$, for m

$-b \quad -b$

$\frac{y-b}{x} = \frac{mx}{x}$

$\frac{y-b}{x} = m \Rightarrow \boxed{m = \frac{y-b}{x}}$

OR $\boxed{m = \frac{y}{x} - \frac{b}{x}}$

5. $2q + 3r = m$, for r

$-2q \quad -2q$

$\frac{3r}{3} = \frac{m-2q}{3}$

$\boxed{r = \frac{m-2q}{3}}$

OR $\boxed{r = \frac{m}{3} - \frac{2q}{3}}$

6. $7a - 7b = p + 3a$, for a

$-3a \quad -3a$

$4a - 7b = p$

$+7b \quad +7b$

$\frac{4a}{4} = \frac{p+7b}{4}$

$\boxed{a = \frac{p+7b}{4}}$ OR $\boxed{a = \frac{p}{4} + \frac{7b}{4}}$

7. $\frac{k}{j} + h = t$, for k

$-h \quad -h$

$\frac{k}{j} \cdot j = t \cdot j - h \cdot j$

$\boxed{k = tj - hj}$

OR $\boxed{k = j(t-h)}$

8. $\frac{k+h}{j} = t$, for k

$\frac{k+h}{j} \cdot j = t \cdot j$

$k + h = tj$

$-h \quad -h$

$\boxed{k = tj - h}$

9. $3m - n = 5m + 4$, for n

$-3m \quad -3m$

$\frac{-1n}{-1} = \frac{2m}{-1} + \frac{4}{-1}$

$\boxed{n = -2m - 4}$