Principles of Algebra Name/Date Clee / Today

ALL PROBLEMS CAN BE COMPLETED ON THIS WORKSHEET

WS 4A.2 – More Solving Literal Equations & Formulas

1. The formula to find the perimeter of a rectangle is $P = 2l + 2w$. Use this formula to find the width of a rectangle with perimeter 76 and length 28. Show your work.

$P = 2l + 2w$

$76 = 2(28) + 2w$

$76 = 56 + 2w$

$20 = 2w$

$10 = w$

The width is 10 units.

2. Solve the formula $P = 2l + 2w$ for w.

$P = 2l + 2w$

$-2l \quad -2l$

$\frac{P}{2} - \frac{2l}{2} = \frac{2w}{2}$

$w = \frac{P}{2} - l$

3. Use the new version of the formula you found in problem #2 to find the width of a rectangle with perimeter 76 and length 28. Show your work.

$w = \frac{P}{2} - l$

$w = \frac{76}{2} - 28$

$w = 38 - 28$

$w = 10$

No Algebra needed! Only arithmetic!

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

4. $p = 2(4r - 5s)$, for r

$p = 8r - 10s$

$+10s \quad +10s$

$\frac{p + 10s}{8} = \frac{8r}{8}$

$r = \frac{p + 10s}{8}$

OR $r = \frac{p}{8} + \frac{5s}{4}$

5. $V = \frac{1}{2}\pi r^2 h$, for h

$\cdot 2 \quad \cdot 2$

$\frac{2V}{\pi r^2} = \frac{\pi r^2 h}{\pi r^2}$

$h = \frac{2V}{\pi r^2}$

6. $ad + 4c = -8c + 7$, for d

$-4c \quad -4c$

$\frac{ad}{a} = \frac{-12c + 7}{a}$

$d = \frac{-12c + 7}{a}$

OR $d = \frac{-12c}{a} + \frac{7}{a}$

7. $\frac{-n}{c} - 5 = d$, for n

$+5 \quad +5$

$\frac{-n}{c} \cdot c = d \cdot c + 5 \cdot c$

$\frac{-1n}{-1} = \frac{cd}{-1} + \frac{5c}{-1}$

$n = -cd - 5c$

8. $\frac{3w}{2} + q - \frac{w}{3} = w + 4q$, for w

$\cdot 6 \quad \cdot 6 \quad \cdot 6 \quad \cdot 6 \quad \cdot 6$

$9w + 6q - 2w = 6w + 24q$

$7w + 6q = 6w + 24q$

$-6w \quad -6w$

$w + 6q = 24q$

$-6q \quad -6q$

$w = 18q$

9. $A = \frac{1}{2}h(b_1 + b_2)$, for b_2

$\cdot 2 \quad \cdot 2 \quad \cdot 2$

$A = \frac{1}{2}hb_1 + \frac{1}{2}hb_2$

$2A = hb_1 + hb_2$

$-hb_1 \quad -hb_1$

$\frac{2A}{h} - \frac{hb_1}{h} = \frac{hb_2}{h}$

$b_2 = \frac{2A}{h} - b_1$