AGS 1 Name: _____ Period: ____ Date: _____

Notes 5.3 – Solving Equations and Inequalities

Warmup – Solve each equation

1. $(6)\frac{7x-1}{6} = 5(6)$

$7x - 1 = 30$
$+1 \quad +1$
$\frac{7x}{7} = \frac{31}{7}$

$x = \frac{31}{7}$

2. $-2 = 3x - 18 - 5x$

$-2 = -2x - 18$
$+18 \qquad +18$
$\frac{16}{-2} = \frac{-2x}{-2}$

$x = -8$

3. $10x + 18 = 8x + 4$

$-8x \quad -8x$
$2x + 18 = 4$
$-18 \quad -18$
$\frac{2x}{2} = \frac{-14}{2}$

$x = -7$

4. $9x = 6(x + 4)$

$9x = 6x + 24$
$-6x \quad -6x$
$\frac{3x}{3} = \frac{24}{3}$

$x = 8$

5. $40 + 14x = 2(-4x - 13)$

$40 + 14x = -8x - 26$
$+8x \quad +8x$
$40 + 22x = -26$
$-40 \qquad -40$
$\frac{22x}{22} = \frac{-66}{22}$

$x = -3$

6. $5(x + 2) = \frac{3}{5}(5 + 10x)$

$5x + 10 = 3 + 6x$
$-5x \qquad -5x$
$10 = 3 + x$
$-3 \quad -3$

$x = 7$

Lesson

Word	Meaning/Notation	Example
Literal Equation	An equation where variables represent known values, a formula.	$A = lw$ $y = mx + b$

Solving Literal Equations * isolate the variable you are solving for

a) $f = ma$ solve for a

$\frac{f}{m} \quad \frac{ma}{m}$

$a = \frac{f}{m}$

b) $P = 2l + 2w$ solve for w

$-2l \quad -2l$

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

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

or

$\frac{1}{2}P - l = w$

c) $(2)A = \frac{1}{2}h(b_1 + b_2)(2)$ solve for b_1

$\frac{2A}{h} = \frac{h(b_1+b_2)}{h}$

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

$-b_2 \quad -b_2$

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

d) $2x + 2y = 6$ solve for y

$-2x \quad -2x$

$\frac{2y}{2} = \frac{-2x}{2} + \frac{6}{2}$

$y = -x + 3$

e) $4x = -y - 6$ solve for y

$+6 \quad +6$

$\frac{4x+6}{-1} = \frac{-y}{-1}$

$y = -4x - 6$

f) $a = bcd$ solve for c

$\frac{a}{bd} \quad \frac{bcd}{bd}$

$c = \frac{a}{bd}$