Name:_____   Date:_____

Notes
Algebra Section 3.8
Pages 184-189

Goal: "I will rewrite equations and formulas"

Ex: Solve $ax + b = c$ for x This means to: isolate x

$$\underline{\quad -b \quad -b \quad}$$
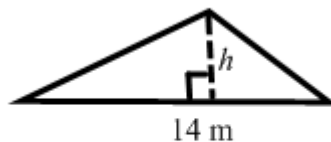$$\frac{ax}{a} = \frac{c-b}{a}$$

$$x = \frac{c-b}{a}$$

Solve the following equations for the given variable.

Ex: Solve $A = \frac{1}{2}bh$ for h Find h if the shown triangle has an area of 64.4 m²

$2A = bh$ To get rid of ½ multiply by 2
$$\frac{2A}{b} = h$$

14 m

Plug in A and b into new equation. Plug numbers to solve for h

$$\frac{2(64.4)}{14} = h$$

$$\frac{128.8}{14} = h$$

9.2 m = h

Ex: $p + qx = r$ for x

$$\frac{r - p}{q} = x$$

Ex: $A = lw$ for l, then find l if A = 351 cm² and w = 13 cm

$$\frac{A}{w} = l$$

$$\frac{351}{13} = l$$ l = 27 cm

Ex: You are visiting Toronto over the weekend and look up a weather forecast. Find the low temperatures for Saturday and Sunday in degrees Fahrenheit. First rewrite the conversion formula so *F* is isolated:

$$C = \frac{5}{9}(F - 32)$$

	Friday	**Saturday**	**Sunday**
Forecast	Sunny	Sunny	Partly Cloudy
High	$21°C$	$22°C$	$16°C$
Low	$13°C$	$14°C$	$10°C$

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

Saturday

$$\frac{9}{5} \cdot 14 + 32 = F$$

$$57.2 = F$$

Sunday

$$\frac{9}{5} \cdot 10 + 32 = F$$

$$50 = F$$

RECALL THAT ALL FUNCTIONS START WITH: **** *y =*

So when you are rewriting an equation so it is in function form that means to isolate:

Ex: −2*x* + 3*y* = 6

$$\frac{3y}{3} = \frac{6 + 2x}{3}$$

$$y = 2 + \frac{2}{3}x$$

Ex: 4*x* – 2*y* = −6

$$\frac{-2y}{-2} = \frac{-6 - 4x}{-2}$$

y = 3 + 2*x*

Ex: 8*x* + 2*y* = −2

$$\frac{2y}{2} = \frac{-2 - 8x}{2}$$

y = −1 − 4*x*

Ex: 3*x* + 2*y* = 8

$$\frac{2y}{2} = \frac{8 - 3x}{2}$$

$$y = 4 - \frac{3}{2}x$$

Ex: −3*x* – *y* = 7

$$\frac{-y}{-1} = \frac{7 + 3x}{-1}$$

y = −7 − 3*x*

Ex: −5*x* – *y* = 10

$$\frac{-y}{-1} = \frac{10 + 5x}{-1}$$

y = −10 − 5*x*