9.2 Rewriting Equations and Formulas

Objective:

- To rewrite equations with more than 1 variable

Example 1: **Solve for y.**

a. $7x + 3y = 8$

$-7x \quad -7x$

$3y = -7x + 8$

$\div 3 \quad \div 3$

$y = -\frac{7}{3}x + \frac{8}{3}$

b. $11x - 9y = -4$

$-11x \quad -11x$

$-9y = -11x - 4$

$\div -9 \quad \div -9$

$y = \frac{11}{9}x + \frac{4}{9}$

c. $x + xy = 1$

$-x \quad -x$

$xy = -x + 1$

$\div x \quad \div x$

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

Example 2: **Calculate the Value of the Variable.**

a. Given $x + xy = 1$, find the value of y when $x = -1$ and $x = 3$

$-1 + -1y = 1$

$+1 \quad +1$

$-y = 2$

$\div -1 \quad \div -1$

$y = -2$

$3 + 3y = 1$

$-3 \quad -3$

$3y = -2$

$\div 3 \quad \div 3$

$y = -2/3$

b. Given $6x - 5y - 44 = 0$, find the value of y when $x = 4$

$6(4) - 5y - 44 = 0$

$24 - 5y - 44 = 0$

$+5y \quad +5y$

$24 - 44 = 5y$

$-20 = 5y$

$y = -4$

Example 3: **Rewrite Common Formulas for the Given Variable.**

Simple Interest formula

a. $I = Prt$, for r

$\div Pt \quad \div Pt$

$\frac{I}{Pt} = r$

Area of a triangle

b. $A = \frac{1}{2}bh$, for h

$\cdot 2 \quad \cdot 2$

$2A = bh$

$\div b \quad \div b$

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

Perimeter of a Rectangle

c. $P = 2l + 2w$, for l

$-2w \quad -2w$

$P - 2w = 2l$

$\div 2 \quad \div 2$

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

Homework: 1.4 Practice A