

Name: \_\_\_\_\_

Class: \_\_\_\_\_

AU1: Notes #7 – Rearranging Formulas

Date: \_\_\_\_\_

**Example 1:**

Solve each equation for  $x$ . For part c, remember a variable symbol, like  $a$ ,  $b$ , and  $c$ , represents a number.

a)  $2x - 6 = 10$

b)  $-3x - 3 = -12$

c)  $ax - b = c$

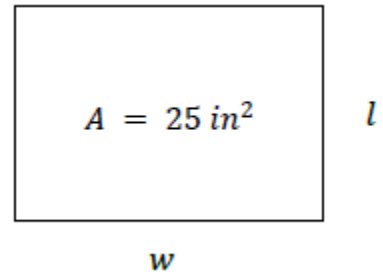
Solve the following equation.

a)  $ax - b = c$  for  $a$

**Example 2:**

The area  $A$  of a rectangle is  $25 \text{ in}^2$ . The formula for area is  $A = lw$ .

- If the width  $w$  is 10 inches, what is the length  $l$ ?



- If the width  $w$  is 15 inches, what is the length  $l$ ?

- Rearrange the area formula to solve for  $l$ .

- Verify that the area formula, solved for  $l$  will give the same results for  $l$  as having solved for  $l$  in the original area formula.

For Try-It 3 & 4 - Solve each problem two ways. First, substitute the given values and solve for the given variable. Then, solve for the given variable and substitute the given values.

**Try-It 3:**

The perimeter formula for a rectangle is  $p = 2(l + w)$  where  $p$  represents the perimeter,  $l$  represents the length, and  $w$  represents the width. Calculate  $l$  when  $p = 70$  and  $w = 15$ .

**Try-It 4:**

The area formula for a triangle is  $A = \frac{1}{2}bh$ , where  $A$  represents the area,  $b$  represents the length of the base and  $h$  represents the height. Calculate  $b$  when  $A = 100$  and  $h = 20$ .

**Try-It 5:**

Solve each formula for the specified variable. Assume no variable is equal to 0.

a. Given  $A = p(1 + rt)$ .

i. Solve for  $p$

ii. Solve for  $t$

b. Given  $K = \frac{1}{2}mv^2$

i. Solve for  $m$

ii. Solve for  $v$

**Example 6:**

Equation Containing More than One Variable	Related Equations
Solve $ax + b = d - cx$ for $x$	Solve $3x + 4 = 6 - 5x$ for $x$
Solve for $x$ $\frac{ax}{b} + \frac{cx}{d} = e$	Solve $\frac{2x}{5} + \frac{x}{7} = 3$ for $x$