Solve the following equation for *x*:

$$2x + 6 = 10$$

$$-6 \quad -6$$

$$\frac{2x}{2} = \frac{4}{2}$$

$$\boxed{x = 2}$$

Solve the following equation for *x*:

$$\begin{array}{r} -3x - 3 = -12 \\ +3 \quad +3 \\ \hline -3x = -9 \end{array}$$

$$\frac{-3x}{-3} = \frac{-9}{-3}$$

$$\boxed{x = 3}$$

Solve the following equation for *y*:

$$2x - 4y = 12$$
$$-2x \qquad -2x$$
$$-4y = 12 - 2x$$
$$\frac{-4y}{-4} \quad \frac{12 - 2x}{-4}$$

$$\boxed{y = -3 + \frac{1}{2}x}$$

Solve the following equation for *x*:

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

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

What was different about solving this equation compared to the first examples? Did we change our process?

Rearranging Formulas

When we rearrange formulas we treat the other variables as numbers and perform operations the same way.

Remember to only isolate the specified variable in the problem.

1 2

What are some examples of well-known formulas?

Area of a rectangle: $A = lw$

1. Rearrange the formula to solve for *l*.

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

2. Express the formula in terms of the width.

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

1 2

The formula used for converting the temperature from degrees Celsius to degrees Fahrenheit is $^\circ F = {}^\circ C\frac{9}{5} + 32$. Create a formula that converts the temperature from Fahrenheit to Celsius.

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