

**Algebra 1 12/14**

**Warm Up IXL**

**Algebra 1**

**I.7**

## 2-4 Solving Equations with Variables on Both Sides

I can solve equations with the variable on each side

### Identities

Equations that are true for all values of the variables

$$3 = 3 \text{ or } x = x \text{ or } 0 = 0$$

True Statement

$\mathbb{R}$

$\infty$  solutions

$\mathbb{R}$  all real numbers

### No Solution

Equations that do not work for any value of the variables

$$6 = 5 \text{ or } x = y \text{ or } -2 = 0$$

Untrue/False Statement

$\emptyset$

no solution

I can solve equations with the variable on each side

Ex. 1 Solve

$$5x + 5 = 3(5x - 4) - 10x$$

$$5x + 5 = 15x - 12 - 10x$$

$$\begin{array}{r} 5x + 5 = 5x - 12 \\ -5x \quad -5x \\ \hline \end{array}$$

$$5 = -12$$

$\emptyset$

I can solve equations with the variable on each side

Ex. 2 Solve

$$3(2b - 1) - 7 = 6b - 10$$

$$6b - 3 - 7 = 6b - 10$$

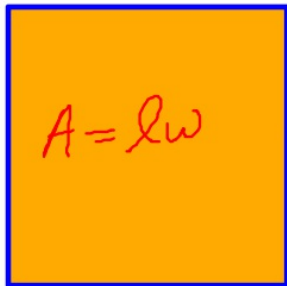
$$\begin{array}{r} 6b - 10 = 6b - 10 \\ -6b \quad \quad -6b \\ \hline \end{array}$$

$$-10 = -10$$

$\infty$  sol.

I can solve equations with the variable on each side

Ex. 3 Find the value of  $x$  so that the figures have the same area

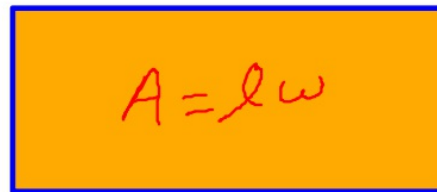


$$l = x \text{ cm}$$

$$A = x \cdot 10$$

$$A = 10x$$

$$10 \text{ cm} = w$$



$$6 \text{ cm} = w$$

$$l = 3 + x \text{ cm}$$

$$A = (3 + x) \cdot 6$$

$$A = 18 + 6x$$

$$\begin{array}{r} 10x = 18 + 6x \\ -6x \quad \quad -6x \\ \hline \end{array}$$

$$\frac{4x}{4} = \frac{18}{4}$$

$$x = 4.5$$

## I can solve equations with the variable on each side

Ex. 4 Find the value of  $x$  so that the figures have the same perimeter

$$P = 2l + 2w \quad x = w$$

$$l = 6$$

$$P = 2 \cdot 6 + 2 \cdot x$$

$$P = 12 + 2 \cdot x$$

$$\begin{array}{r} 12 + 2x = 6x + 4 \\ -6x \quad -6x \\ \hline 12 - 4x = 4 \end{array}$$

$$\begin{array}{r} 12 - 4x = 4 \\ -12 \quad -12 \\ \hline -4x = -8 \end{array}$$

$$\begin{array}{r} -4x = -8 \\ \hline -4 \quad -4 \end{array}$$

$$x = 2$$

$$P = 2l + 2w$$

$$2x + 2 = w$$

$$P = 2 \cdot x + 2(2x + 2)$$

$$P = 2x + 4x + 4$$

$$x = l \quad P = 6x + 4$$

I can solve equations with the variable on each side

ICA Pg 100  
#26-40even

Hmwk IXL Algebra 1 J.6