

Bellwork 09/11/2017

2, 12, 4, 6, 1, -12, -4, 16

1.)  $3x - x - 4 = 2x + 8$   
 $2x - 4 = 2x + 8$   
 $-4 = 8$   $\emptyset$

2.)  $\frac{1}{6}x + 17 = 15$   
 $-17$   
 $-\frac{1}{6}x - 2 = -2$   
 $x = -12$

Find the width of the rectangle. 10 cm

1. Area =  $32 \text{ m}^2$  32 = 8 \cdot x  
 $x = 4$

2. Area =  $150 \text{ cm}^2$

Quizzes

**EXAMPLE 3 Solving Equations with No Solution**

Solve  $3 - 4x = -7 - 4x$ .

$3 - 4x = -7 - 4x$  Write the equation.

Undo the subtraction.  $\rightarrow +4x$   $\quad +4x$  Addition Property of Equality

$3 = -7$   $\times$  Simplify.

$\therefore$  The equation  $3 = -7$  is never true. So, the equation has no solution.

When solving an equation that has infinitely many solutions, you will obtain an equivalent equation that is true for all values of the variable, such as  $-5 = -5$ .

**EXAMPLE 4 Solving Equations with Infinitely Many Solutions**

Solve  $6x + 4 = 4\left(\frac{3}{2}x + 1\right)$ .

$6x + 4 = 4\left(\frac{3}{2}x + 1\right)$  Write the equation.

$6x + 4 = 6x + 4$  Distributive Property

Undo the addition.  $\rightarrow -6x$   $\quad -6x$  Subtraction Property of Equality

$4 = 4$  Simplify.

$\therefore$  The equation  $4 = 4$  is always true. So, the equation has infinitely many solutions.

$4(3x - 8) = 2(6x + 4)$

$12x - 32 = 12x + 8$

$-32 = 8$

$\emptyset$

Solve  $3 - 4x = -7 - 4x$ .

Solve the equation.

4.  $2x + 1 = 2x - 1$

5.  $\frac{1}{2}(6x-4) = 3x-2$   
 $3x-2 = 3x-2$   
 $0 = 0$   
 $\infty$

Write an equation, then solve for the variable.

You and your friend work for two separate teachers. Mr. Hagen pays your friend \$20.00 to start and \$0.50 for each paper they grade. Mr. Hildebrandt pays you \$10.00 to start and \$0.75 for each paper you grade. How many papers,  $p$ , must you grade to make the same amount of money as your friend?

1.4 - Rewriting Equations and Formulas

Objectives:

Use addition, subtraction, multiplication, and division to rewrite equations.

Rewrite equations to solve for one variable in terms of the other variable

EXAMPLE 1 Rewriting an Equation

Solve the equation  $2y + 5x = 6$  for  $y$ .

$2y + 5x = 6$  Write the equation.  
 Undo the addition.  $\rightarrow 2y + 5x - 5x = 6 - 5x$  Subtraction Property of Equality  
 $2y = 6 - 5x$  Simplify.  
 Undo the multiplication.  $\rightarrow \frac{2y}{2} = \frac{6 - 5x}{2}$  Division Property of Equality  
 $y = 3 - \frac{5}{2}x$  Simplify.

Solve the equation for  $y$ .

9.  $4.2x - 1.4y = 2.1$

$\frac{6x}{6} = \frac{6}{6}$

$$\begin{array}{r} 4.2x - 1.4y = 2.1 \\ -4.2x \phantom{-1.4y} \phantom{=} -4.2x \\ \hline -1.4y = 2.1 - 4.2x \\ -1.4 \phantom{=} \phantom{=} -1.4 \\ \hline y = -1.5 + 3x \end{array}$$

$2.8x - 1.4y = 8.4$

$$\begin{array}{r} 2.8x - 1.4y = 8.4 \\ -2.8x \phantom{-1.4y} \phantom{=} -2.8x \\ \hline -1.4y = 8.4 - 2.8x \\ -1.4 \phantom{=} \phantom{=} -1.4 \phantom{=} \text{and} \\ \hline y = -6 + 2x \end{array}$$

Solve the equation for  $y$ .

1.  $2x + y = -9$       2.  $4x - 10y = 12$       3.  $13 = \frac{1}{6}y + 2x$

Rewrite the equation in terms of  $y$ .

$$2x + 5y = 6$$

Pg. 24 # 18, 19, 21, 24, 27

Pg. 30 # 5, 6, 7, ~~11, 12, 13~~