

# Algebra 1

- Warm Up
- Questions on HW
- Notes on 3.3 Solving Equations with Variables on Both Sides.
- Classwork/Homework

Objective

Students will be able to solve equations with variables on both sides multiple ways.

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**Warm Up:** In your group, start activity on next slide.

## Activity: Using a Table to Solve an Equation

Costs for a key chain business are \$540 to get started plus \$3 per key chain. The cost of producing  $k$  key chains is  $(540 + 3k)$  dollars.

Key chains sell for \$7 each. The revenue for selling  $k$  key chains is  $7k$  dollars. To make a profit, revenue must be greater than costs.

1. Create a table to compare the cost and profit based on the number of keys made. Start at 0 Keys to 150 keys.

2. For 110 key chains, which is greater, the cost or the revenue?
3. When will the revenue be greater than the cost?
4. Use your table to estimate the solution of  $540 + 3k = 7k$ .
5. Explain how solving an equation can help you decide whether a business can make a profit or not.

With your group, come up with two different ways to solve this.

$$2(2x + 4) = 8x + 32$$

#### SKATE RENTALS

In-line skates and  
safety equipment  
\$3.50/hour

Safety equipment  
\$1.50/hour



**Recreation** You can buy used in-line skates from your friend for \$40, or you can rent some. Either way, you must rent safety equipment. How many hours must you skate for the cost of renting and buying skates to be the same?

**2 Business** A hairdresser is considering ordering a certain shampoo. Company A charges \$4 per 8-oz bottle plus a \$10 handling fee per order. Company B charges \$3 per 8-oz bottle plus a \$25 handling fee per order. How many bottles must the hairdresser buy to justify using Company B?

## **Solving by graphing!**

$$2x + 5 = 9x - 23$$

**Graph each equation.  
Find intersection.**

## **Solving equations with...**

**No solutions and Infinite solutions  
(an identity)**

$$6m - 5 = 7m + 7 - m$$

$$10 - 8a = 2(5 - 4a)$$

## **Classwork/Homework**

**Pg. 137 #11-16, 18-22, 32,  
33, 36, 37, 48**