Unit 1 – Day 20 Application Notes
Target: Solve Real World Problems with Linear Equations

Helpful Hints when solving word problems:

1. Read each word problem at least two to three times
2. <u>Underline what you know</u> and assign a variable to what you need to find.
3. Set up an equation and solve.
4. Determine if the answer is reasonable/makes sense.

Let's give it a try!

Example 1: You decide to join a gym over the summer. You have $600 in your savings account. Lifetime Fitness charges $95.00 start-up fee and $75 per month to join. How many months can you afford to be a member?

a) Set up equation: $95.00 + 75x = 600$

b) Solve:

$$\frac{75x}{75} = \frac{505.00}{75}$$

$$x = 6.73$$

about 6 months

Example 2: Your school is planning a field trip to the zoo! There are two different bus options. The school wants to know how many students will need to go in order for the two companies to cost the SAME. Bus A charges $40 to rent plus $4 for each student. Bus B charges $100 to rent plus $2 each student.

a) Set up equation: ✱ Set them = to each other ✱

$$40 + 4x = 100 + 2x$$

$$2x = 60$$

b) Solve: $x = 30$ students

PARTNER PRACTICE!

1. Oliver decides to order some baseball cards online. Each pack of cards costs $3.50, and the shipping fee is a flat $5.00, no matter how many cards he orders. If your order came to a total of $50.50, how many packs of cards did Oliver order?

   A) Set Up Equation:

   $$3.50x + 5 = 50.50$$
   $$3.50x = 45.50$$

   B) Solve:

   $$x = 13$$

   13 packs of baseball cards

2. Isabella is trying to decide on a cell phone plan. Plan 1 is $30 plus $0.01 per text. Plan 2 is $5 plus $0.10 per text. How many texts does Isabella need to use for the plans to cost the same?

   A) Set up Equation:

   $$30 + 0.01x = 5 + 0.10x$$

   B) Solve:

   $$\frac{25}{.09} = \frac{.09x}{.09}$$

   $$x = 277.78$$ about 277 texts

3. Brad is a waiter, and he gets paid $5.75 per hour plus tips. One day, he earned a total of $123.20 in tips. If he took home $169.20 including his tips, how many hours did he work?

   A) Set up Equation:

   $$5.75x + 123.20 = 169.20$$
   $$5.75x = 46$$

   $$x = 8$$

   B) Solve:

   He worked 8 hours