

# Last Unit of the 9 Weeks: Linear Relationships

- We will have two more quizzes and a few more weeks of ALEKS
- We looked at many types of functions in our last unit. This unit is focused exclusively on functions that make straight lines.

## Today – Group Problem: Proportional Relationships

- Proportional relationships are a common type of linear relationship. In your group, you will be looking at a situation that is **proportional**. (Actually, one of the problems is NOT proportional!)
- You will be creating an equation, table, and graph for this situation, and answering other questions about it as well.

## **GROUP ROLES**

- One person will write out the answers for 1-4.
- One person will create the graph (#5).
- One person will write out the answers for 6-7.
- JUST BECAUSE YOU'RE NOT THE CURRENT "WRITER" DOES NOT MEAN YOU GET TO TAKE A BREAK!
- All three group members must be working together on each problem.
- If you are off task and your response is "But it's not my turn to write!"...that is a VERY EASY way to lose LiveSchool points.

## Discussion: Compare/Contrast

- This discussion is the most important part of the whole lesson!
- We will be finding patterns/drawing conclusions about proportional relationships.

PROBLEM 1: Larry paid \$18.96 for 3 pounds of coffee.
PROBLEM 2: Barry ran 84 miles in 12 hours.
PROBLEM 3: Carrie cleaned 6 windows in 5 minutes.
PROBLEM 4: Harry ate 114 wings in 16 minutes.
PROBLEM 5: Mary bought a dog. After 4 years, the dog was 16 pounds. After 6 years, the dog was 20 pounds.

PROBLEM 1: Larry paid \$18.96 for 3 pounds of coffee. Every pound is \$6.32. y = 6.32x
PROBLEM 2: Barry ran 84 miles in 12 hours. Every hour, he runs 7 miles. y = 7x
PROBLEM 3: Carrie cleaned 6 windows in 5 minutes. Every minute, she cleans 1.2 windows. y = 1.2x
PROBLEM 4: Harry ate 114 wings in 16 minutes. Every minute, he eats 7.125 wings. y = 7.125x
PROBLEM 5: Mary bought a dog. After 4 years, the dog was 16 pounds. After 6 years, the dog was 20 pounds. Every year, the dog gains 2 pounds. y = 2x + 8

#### Themes

- All the graphs were linear. Why does this make sense???
- Four of the graphs passed through (0, 0). What about the situations made them this way?
- Why did the other graph **NOT** go through the origin?

### HOMEWORK

- Copy the following problem onto your own paper, then complete.
- Larry bought 6 TVs for \$1650. Assume there is no tax. Create an equation, table, and graph where "x" is the number of TVs and "y" is the total cost.