

## Unit Rate 2-Step Problems

Create the unit rate. Then determine the answer to the question.

1. Kristina drove 204 miles to her mother's house. If it took her 3 hours, what was her average speed?
2. A t-shirt launcher can launch 5 t-shirts in 15 minutes. How long would it take to launch 12 t-shirts?
3. Four gallons of gas cost \$16.80. How many gallons can I get for \$63?
4. Oliver needs to ride his bike to his friend's house that is 96 miles away. He is riding at an average rate of 15 miles per hour. He has 6 hours to get there. Will he make it in time?
5. Which is the best buy?  
6 shirts for \$25.50                      5 shirts for \$21                      4 shirts for \$18
6. Adi took 12 hours to read a 360-page book. At this rate, how long will it take her to read a 135-page book?
7. Five lemons cost \$1.80. How much will it cost if you bought 9 lemons?
8. Aiden is headed to his aunt's house. For the first 2 hours he drives at 55 mph. For next hour, he drives 70 mph. For the final 2 hours he drives 50 mph.
  - a. How far does Adrian travel?
  - b. What is his average speed for the entire trip?

## KEY

1. Michelle drove 204 miles to her mother's house. If it took her 3 hours, what was her average speed?

$$204/3 = 68 \text{ miles per hour}$$

2. A t-shirt launcher can launch 5 t-shirts in 15 minutes. How long would it take to launch 12 t-shirts?

$$15/5 = 3 \text{ t-shirts per minute} \quad 3 \text{ t-shirts} \cdot ? \text{ minutes} = 12 \quad 12/3 = 4 \text{ minutes}$$

$$\frac{\text{t-shirts}}{\text{minutes}} \frac{15}{5} = \frac{3}{1} \quad \text{then} \quad \frac{3}{1} = \frac{12}{x}$$

3. Four gallons of gas cost \$16.80. How many gallons can I get for \$63?

$$16.80/4 = 4.20/\text{gallon} \quad 4.20 \cdot ? \text{gallons} = \$63 \quad \text{SO } \$63/4.20 = 15 \text{ gallons}$$

$$\frac{\$}{\text{gallon}} \frac{16.80}{4} = \frac{4.20}{1} \quad \text{then} \quad \frac{4.20}{1} = \frac{63}{x}$$

4. Jacob needs to ride his bike to his friend's house that is 96 miles away. He is riding at an average rate of 15 miles per hour. He has 6 hours to get there. Will he make it in time?

$$\frac{\text{miles}}{\text{hour}} \frac{96}{x} = \frac{15}{1} \quad 96/15 = 6.4 \text{ hours- It will take more than 6 hours, so he will not be there in 6 hours.}$$

5. Which is the best buy?

6 shirts for \$25.50

5 shirts for \$21

4 shirts for \$18

\$4.25/shirt

\$4.20/shirt- best buy

\$4.50/shirt

6. Klaudia took 12 hours to read a 360-page book. At this rate, how long will it take her to read a 135-page book?

$$\frac{\text{pages}}{\text{hour}} \frac{360}{12} = \frac{30}{1} = \frac{135}{x} \quad \text{then...} 135/30 = 4.5 \text{ hours}$$

7. Five lemons cost \$1.80. How much will it cost if you bought 9 lemons?

$$1.80/5 = .36/\text{lemon} \quad .36 \cdot 9 = \$3.24$$

$$\frac{\$}{\text{lemons}} \frac{1.80}{5} = \frac{.36}{1} = \frac{x}{9}$$

8. Owen is headed to his aunt's house. For the first 2 hours he drives at 55 mph. For next hour, he drives 70 mph. For the final 2 hours he drives 50 mph.

a. How far does Owen travel?

$$55 + 55 + 70 + 50 + 50 = 280 \text{ miles in 5 hours}$$

b. What is his average speed for the entire trip?

$$280 \text{ miles} \div 5 \text{ hours} = 56 \text{ mph}$$