

# 3-4 Ratio and Proportion

Consider the following Examples...

1. Mary takes a trip and drives 200 miles in 4 hours. Calculate Mary's speed in miles per hour?

2. Joe drives his scooter 30 miles per hour for 3 hours. How far was Joe able to drive?

There actually is a formula that we sometimes use  $\rightarrow d = r \cdot t$

3. What is the speed, in meters per second, of a paper airplane that flies 24 meters in 6 seconds?

4. A hiker walked 12.8 miles from 9:00 a.m. to noon. He walked an additional 17.2 miles from 1:00 p.m. to 6:00 p.m. What is his average speed for the entire walk, in miles per hour?

Let's try a little different question!!

5. Gerald goes to the grocery store and buys 12 pounds of bananas for \$4.68. What is the cost per pound for the bananas?

6. Main Street Florist sells 24 roses for \$24.60. Flowers for You Florist sells 6 roses for \$7.50. Which florist has the "better buy" or the lower cost per rose?

Let's switch gears for a few...

A **proportion** is \_\_\_\_\_

The cross products of proportions are \_\_\_\_\_

1. $\frac{3}{4} = \frac{x}{16}$	2. $\frac{x}{84} = \frac{4}{7}$	3. $\frac{2}{8} = \frac{n}{20}$
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Let's look at two ways to solve this problem...

You are riding your bicycle. It takes you 20 minutes to go 5 miles. How long would it take you to cycle 12 miles?

Using  $d = rt$

Setting up a Proportion

2. It takes Tammy 45 minutes to ride her bike 5 miles. At this rate, how long will it take her to ride 8 miles?

1. A rocket car on the Bonneville Salt Flats is traveling at a rate of 640 miles per hour. How much time would it take for the car to travel 384 miles at this rate?

2. On a trip, a student drove 40 miles per hour for 2 hours and then drove 30 miles per hour for 3 hours. What is the student's average rate of speed, in miles per hour, for the whole trip?

3. The trip from Manhattan to Montauk Point is 120 miles by train or by car. A train makes the trip in 2 hours, while a car makes the trip in 2.5 hours. How much faster, in miles per hour, is the average speed of the train than the average speed of the car?

5.  $\frac{x+4}{4} = \frac{9}{2}$

6.  $\frac{n+4}{5} = \frac{n-2}{7}$