

7th Grade Lesson 53



- I can express rate in two forms.
- I can solve rate problems by multiplying by the correct form of the rate.

Rates

Every rate has two forms.

A car is traveling at 50 miles per hour. What are the two forms of the rate?

$$\frac{50 \text{ miles}}{1 \text{ hr}} \quad \frac{1 \text{ hr}}{50 \text{ miles}}$$

the two forms are reciprocals

Rate problems are solved by multiplying by the correct form of the rate.

A car is traveling at 50 miles per hour.

$$\frac{50 \text{ mi}}{1 \text{ hr}} \quad \frac{1 \text{ hr}}{50 \text{ mi}}$$

How long will it take for the car to travel 300 miles?

$$\frac{\cancel{6} \cancel{300} \text{ mi}}{1} \cdot \frac{1 \text{ hr}}{\cancel{50} \cancel{\text{mi}}} = 6 \text{ hrs}$$

How far will the car travel in 4 hours?

$$\frac{\cancel{4} \text{ hrs}}{1} \cdot \frac{50 \text{ mi}}{\cancel{1} \cancel{\text{hr}}} = 200 \text{ mi}$$

There were 5 chairs in each row.

$$\frac{5 \text{ chairs}}{1 \text{ row}} \quad \frac{1 \text{ row}}{5 \text{ chairs}}$$

How many chairs in 6 rows?

$$\frac{\cancel{6} \text{ rows}}{1} \cdot \frac{5 \text{ chairs}}{\cancel{1} \cancel{\text{row}}} = 30 \text{ chairs}$$

How many rows are needed for 20 chairs?

$$\frac{\cancel{20} \text{ chairs}}{1} \cdot \frac{1 \text{ row}}{\cancel{5} \cancel{\text{chairs}}} = 4 \text{ rows}$$

Eight ounces of the solution costs 40 cents.

$$\frac{\$0.40}{8 \text{ oz}} \quad \frac{8 \text{ oz}}{\$40}$$

Find the cost of 32 ounces of the solution.

$$\frac{32 \text{ oz}}{1} \cdot \frac{\$0.40}{8 \text{ oz}} = \$1.60$$

How many ounces can be purchased for \$1.20?

$$\frac{\$1.20}{1} \cdot \frac{8 \text{ oz}}{\$40} = 24 \text{ oz}$$

Jennifer's speed was 60 miles per hour.

$$\frac{60 \text{ miles}}{1 \text{ hour}} \quad \frac{1 \text{ hour}}{60 \text{ miles}}$$

How far did she drive in 5 hours?

$$\frac{5 \text{ hours}}{1} \cdot \frac{60 \text{ miles}}{1 \text{ hour}} = 120 \text{ miles}$$

How long would it take her to drive 300 miles?

$$\frac{300 \text{ miles}}{1} \cdot \frac{1 \text{ hour}}{60 \text{ miles}} = 5 \text{ hours}$$

If pencils cost \$0.25 each, how many pencils can Carol Ann buy for \$2.00?

$$\frac{\cancel{\$2.00}^8}{1} \cdot \frac{1 \text{ pencil}}{\cancel{\$0.25}} = 8 \text{ pencils}$$

Assignment:

Problem Set 53

#6, 7, 11, 12, 15,
21, 22, 25, 27, 28

