

Name _____

Distance, Rate, and Time**Essential Question** How can you solve problems involving distance, rate, and time?**UNLOCK the Problem** REAL WORLD

You can use the formula $d = r \times t$ to solve problems involving distance, rate, and time. In the formula, d represents distance, r represents rate, and t represents time. The rate is usually a unit rate comparing distance to time, such as miles per hour.

Example 1

The winner of an automobile race drove 500 miles at an average speed of 150 miles per hour. How long did it take the winner to finish the race?

STEP 1

Write the formula.

$$d = r \times t$$

STEP 2Replace d with 500 and r with 150.

$$d = r \times t$$

$$500 = \square \times t$$

STEP 3Use what you know about inverse operations to find t .

$$500 \div \square = t$$

$$3\frac{1}{3} = t$$

- What word is used in place of rate?

- What are the given values?

- What is the unknown value?

So, it takes the winner _____ hours or _____ hours _____ minutes to complete the race.

Example 2

A race car driver traveled at an average speed of 120 miles per hour to finish a race in 2 hours. What was the length of the race?

STEP 1

Write the formula.

$$d = r \times t$$

STEP 2Replace r with 120 and t with 2.

$$d = r \times t$$

$$d = \square \times \square$$

STEP 3Multiply to solve for d .

$$d = 120 \times 2$$

$$d = \square$$

So, the race was _____ miles long.

Math Talk Why were different operations used in Step 3 of Examples 1 and 2?

Share and Show



1. A cyclist travels 45 miles in 3 hours.
What is the cyclist's speed?

Write the formula: $d = \square \times \square$

Replace d with _____.

Replace t with _____.

The rate is _____ miles per hour.

Use the formula $d = r \times t$ to solve. Include the units in your answer.

2. A train travels at an average speed of 80 miles per hour for 5 hours. How far does the train travel?

3. A horse travels at an average speed of 12 miles per hour. How long does it take the horse to travel 60 miles?

On Your Own

Use the formula $d = r \times t$ to solve. Include the unit in your answer.

4. A hiker travels at a speed of 3 miles per hour for 3 hours. How far does the hiker travel in that time?

5. A snail travels at a speed of 2 centimeters per minute. How long does the snail take to travel 30 centimeters?

6. A boat travels 6 miles in 24 minutes. What is the average speed of the boat?

7. $d = 320$ cm

$r =$ _____

$t = 8$ sec

8. $d =$ _____

$r = 50$ km per hr

$t = 6$ hr

9. $d = 150$ ft

$r = 20$ ft per min

$t =$ _____

Problem Solving

REAL WORLD

10. In an experiment, Ava found that it took a ball 5 seconds to roll down an 80-foot ramp. What is the average speed of the ball?

11. Jason's family is driving 1,375 miles to Grand Canyon National Park. They plan to drive at an average speed of 55 miles per hour. How long will they be driving to reach the park?
