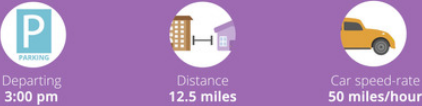Printable Worksheets from sofatutor.com

Distance - Rate - Time – Same Direction

$$t = \frac{d}{r} = \frac{12.5}{25} = \frac{1}{2} = 30\,minutes$$

$$t = \frac{d}{r} = \frac{12.5}{50} = \frac{1}{4} = 15\,minutes$$

P PARKING
Departing
3:00 pm

Distance
12.5 miles

Car speed-rate
50 miles/hour

(1) **Describe the correlation between distance, rate, and time.**

(2) Identify all forms of the equation used to solve the distance-rate-time problem.

(3) Set up an equation to see if Tom arrives earlier than his mom.

(4) Calculate the time Tom's mom takes to drive home if she drives 37.5 miles per hour.

(5) Find the distance each friend has to travel to arrive at the movies.

(6) Determine the time Tom needs to leave home in order to get to school on time.

(+) with lots of tips, answer keys, and detailed answer explanations for all of the problems.

⚠ The complete package, **including all problems, hints, answers, and detailed answer explanations** is available for all sofatutor.com subscribers.

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Worksheet: Distance - Rate - Time – Same Direction
Mathematics / Algebra 1 / Equations / Distance - Rate - Time – Same Direction

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Describe the correlation between distance, rate, and time.

Select the correct equation.

$$r = \frac{d}{t}$$
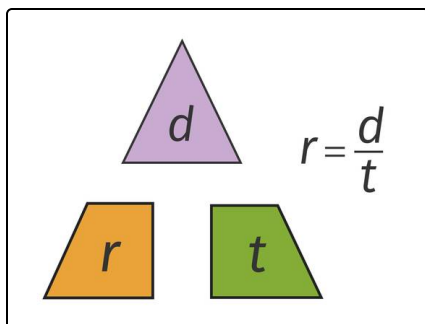
If Tom's mom drove 12.5 miles in 15 minutes, which equation should we use to calculate her rate? Keep in mind that the rate is miles per hour.

A

$$r = 0.25 \times 12.5$$

B

$$r = \frac{12.5}{0.25}$$

C

$$r = 12.5 \times 0.25$$

D

$$r = \frac{0.25}{12.5}$$

☐   ☐   ☐   ☐

Hints for solving these problems

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of 6

Describe the correlation between distance, rate, and time.

Hint #1

Convert minutes to hours:

- 15 minutes is 0.25 hours
- 30 minutes is 0.5 hours

Hint #2

Pay attention to the units of measure:

- Time is measured in minutes or hours
- Distance is measured in miles
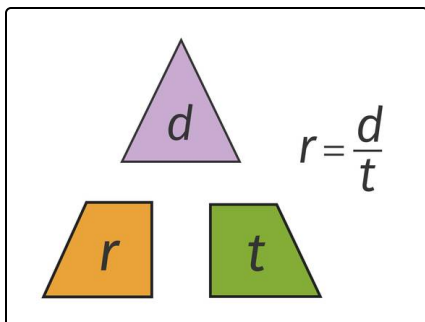- Rate is measured in miles per hour, or mph

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Answers and detailed answer explanations for these problems

1
of 6

Describe the correlation between distance, rate, and time.

Answer key: B

Looking at the triangle on the right, we can establish the following equations:

- $t = \frac{d}{r}$
- $r = \frac{d}{t}$
- $d = t \times r$

Which equation we need depends on the unknown from the questions.

If we're looking for the rate of Tom's mom, since she drives 12.5 miles in 15 minutes, we have to use the second equation. First, we have convert 15 minutes to 0.25 hours. This gives us $r = \frac{12.5}{0.25} = 50$ mph.

If Tom's school bus drives 25 miles per hour for 30 minutes, he will cover a distance of 12.5 miles. For this question we need the third version of this equation. First, we have to convert 30 minutes to 0.5 hours. This leaves us with $d = 0.5 \times 25 = 12.5$ miles.

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