

NAME: _____



Purpose

To solve ratio comparison problems by using unit rates and reasoning

Math Words

rate Walking at a rate of 3 miles per hour for 4 hours would cover a distance of 12 miles.

faster rate Walking 3.5 miles in an hour is a faster rate than walking 3 miles per hour.

per Planting 3 flowers per hour is the same as planting 3 flowers each hour.

Starter Problem

A pickup truck traveled 8 miles in 10 minutes and a car went 22 miles in 25 minutes. Which went at a faster rate?

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Student Thinking



Tiffany

The pickup went 8 miles in 10 minutes. So 8 divided by 10 is how far it went in 1 minute. For the car, I divided 22 by 25. The car went faster, 0.88 mile per minute. Besides, the car drove for 2.5 times as many minutes, but went more than 2.5 times as many miles.



$$\begin{array}{l} \text{Pickup} \\ \frac{8 \text{ miles}}{10 \text{ minutes}} = \frac{0.8 \text{ mile}}{1 \text{ minute}} \end{array} \quad \begin{array}{l} \text{Car} \\ \frac{22 \text{ miles}}{25 \text{ minutes}} = \frac{0.88 \text{ mile}}{1 \text{ minute}} \end{array}$$



Kenji

I need to divide to find out how many miles per minute for the pickup and the car. The pickup went faster.

Pitfall

$$\begin{array}{r} \text{PICKUP} \\ 8 \overline{) 10.00} \text{ miles per minute} \\ \underline{8} \\ 20 \\ \underline{16} \\ 40 \\ \underline{40} \\ 0 \end{array}$$

$$\begin{array}{r} \text{CAR} \\ 22 \overline{) 25.000} \text{ miles per minute} \\ \underline{22} \\ 30 \\ \underline{22} \\ 800 \\ \underline{66} \\ 140 \\ \underline{132} \\ 8 \end{array}$$

Things to Remember

- * _____
- * _____



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Our Turn

Solve by thinking of unit rates or scale factors. Be ready to explain your method.

1. Which is faster: solving 3 problems in 20 minutes or solving 10 problems in 60 minutes?
2. Which is a less expensive price for tickets: Package A, which is \$8.00 for 25 game tickets; or Package B, which is \$3.00 for 6 tickets?
3. Which is a faster rate: serving 30 lunches in 5 minutes or serving 26 lunches in 4 minutes?

NAME:

My Turn

Solve by thinking of unit rates or scale factors. Be ready to explain your method.

1. Which has a slower average rate of speed: the passenger train that travels 400 kilometers in 3 hours or the freight train that travels 600 kilometers in 5 hours?
2. Which is a less expensive way to buy chips for a big party: buy bags of Brand A chips that cost \$3.00 for 20 ounces or buy bags of Brand B that cost \$7.00 for 35 ounces?
3. Bo's gym allows 90 exercisers on a floor of 600 square feet, and K's gym allows 40 exercisers on a floor of 200 square feet. Which gym has more square feet per person?

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Multiple Choice Mini Lesson

Fill in the circle next to the answer you choose.

1. The drugstore sells two types of sticky notes. Brand N costs \$2.00 for 80 notes, and Brand P offers 100 notes for \$3.00. Which brand is least expensive, and what is its cost for 1 note?

☐ Brand N
4¢ each

☐ Brand N
\$0.025 each

☐ Brand P
\$0.06 each

☐ Brand P
3¢ each

2. A zebra was observed running 2800 meters in 200 seconds, and a racehorse was observed running 240 meters in 15 seconds. Which ran faster? What was the faster speed?

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☐ racehorse $\frac{16\text{m}}{\text{sec}}$
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Writing Task Mini Lesson

Explain how you know Brand B is less expensive.

Which is a less expensive corn flakes cereal: Brand A that costs \$3.45 for 15 ounces or Brand B that costs \$3.96 for 18 ounces?



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