Proportion Problem or Not?

NAME:

Math PATHWAYS & PITFALLS

Purpose

To recognize when using a proportion is an appropriate solution method

Math Words

by a factor — If you work for $9 per hour, as the hours increase, your total earnings increase by a factor of 9.

proportional — If you buy 3 times as much and pay 3 times as much, the amount paid is proportional to the amount bought.

Starter Problem

This scale drawing is for a rectangular dog run that is 12 feet long by 5 feet wide. How much more fencing will be needed if the dog run is made 2 yards longer?

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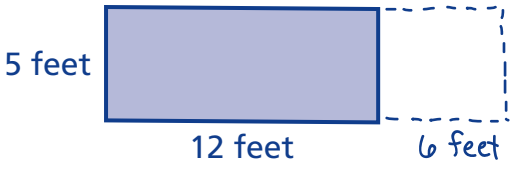
Student Thinking

Isela

I made a diagram. Changing the yards to feet, the longer sides will each be 6 feet longer. The width is the same. The dog run needs 12 feet more fencing.

OK



James

I made a proportion. On the plan, the length to width ratio is 12:5. The new dog run is 12 feet plus 6 feet long and x feet wide. So the ratio is 18:x. Then I solved for x.

Pitfall

LENGTH $\frac{12}{5} = \frac{18}{x}$

WIDTH

$12x = 90$

$12\overline{)90.0}$ → 75, 84, 60, 60, 0

$x = 7.5$ FEET MORE OF FENCING

Things to Remember

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* .....

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STOP

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Our Turn

Think about whether the problem can be solved using a proportion. Solve.

1. A hose leaked 0.18 gallons of water in 15 minutes. How much will have leaked in 24 hours?

2. Joe's folks promise to pay 5 dollars for every 3 dollars that Joe saves for summer camp, which costs $200. So far Joe has saved $60. Does he have enough for summer camp?

3. In January, Joe saved $20 for camp. He plans to save $5 more than this amount for each of the next few months. How many more months will it take him to have saved $220 total?

NAME:

My Turn

Think about whether the problem can be solved using a proportion. Solve.

1. It took 6 workers 2 hours to pack 24 crates of canned goods. How many hours should it take the workers to pack 120 crates?

2. At the amusement park, 50 people can ride the Wild Spinner every 4 minutes. How many people can ride the Wild Spinner in 10 hours?

3. A plan calls for a 12m by 8m rectangular mural on a building. How large will the mural be on a scale drawing if 4cm represents 1m?

Proportion Problem or Not?

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Multiple Choice Mini Lesson

Fill in the circle next to the answer you choose.

1. A company's large triangular sign has a base of 8 m and a height of 10 m. A window sticker version of the sign will be made with a base of 12 cm. What should its height be?

   ○ 9.6 cm ○ 10 cm ○ 14 cm ○ 15 cm

2. A scale of 8 ft = 1 in is used to make a scale drawing of a practice court. The width of the actual court is 50 ft. The length of the court on the scale drawing is 10 in. How long is the court?

   ○ 40 ft ○ 80 ft ○ 60 ft ○ 1.6 yd

STUDENT PAGE 5

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Writing Task Mini Lesson

Explain why you could use a proportion to know the solution to this problem is 3 miles. You may make a drawing to help you.

> Jenna rode her bike 9 miles in 1.5 hours. At this rate, how far would she travel if she rode her bike for 0.5 hours?

Proportion Problem or Not? STUDENT PAGE 6

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