Similar Figures

NAME:

Math PATHWAYS & PITFALLS

Purpose

To solve proportion problems involving similar figures

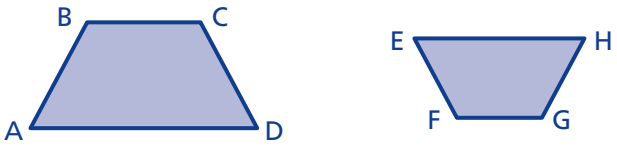
Math Words

similar

The sides of triangle ABC are scaled up by a scale factor of 2 to make a similar triangle EDF.

corresponding sides

In these similar figures, sides BC and FG are corresponding sides.



Starter Problem

Figure A is similar to Figure B (not shown). The two sides of Figure A are 5 cm and 6 cm long. If the longer side of Figure B is 9 cm long, how long is the other side?

Figure A

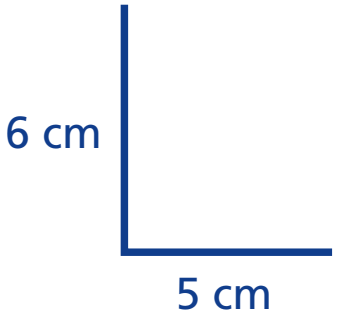


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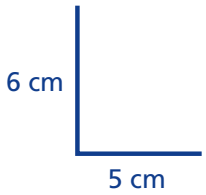
Figure A

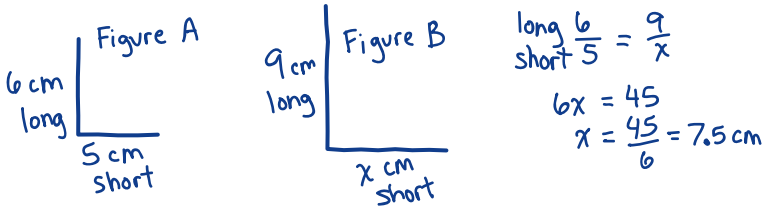


Student Thinking

Maria

Since they're similar, I made a proportion. The first long to short ratio is 6:5. The second long to short ratio is 9:*x*. Then I solved the equation. It makes sense that shorter side is 7.5 cm. If I think of 6:5 and 9:7.5 as fractions, they're both a little more than 1.

OK



Ali

If the long side of Figure B is 3 cm longer than the long side of Figure A, then the short side of Figure B also has to be 3 cm longer than the short side of Figure A. So, 5 + 3 = 8 cm.

Pitfall

Things to Remember

*

*

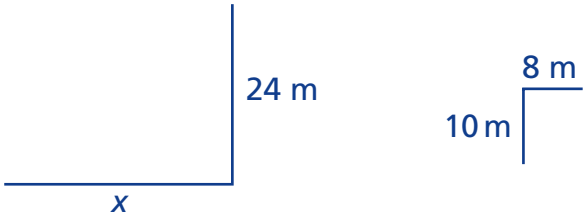
STOP

NAME:

Our Turn

Set up proportions to solve these problems. Draw your own figures if needed. Remember to use labels in your proportions and figures.

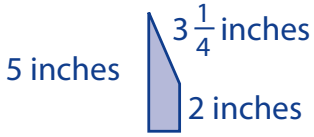
1. The figures below are similar. Find the missing length marked *x*.



2. Rectangle A is 6 inches wide and 21 inches long. Rectangle B is the same shape but bigger. If rectangle B is 20 inches wide, how many inches long is it?

Rectangle A

3. A scale drawing of a flowerbed shows two parallel edges that measure 5 inches and 2 inches and a slanted edge of 3 1/4 inches. If the parallel edges of the real flowerbed are 8 yards and 20 yards, how long is the slanted edge of the real flowerbed?

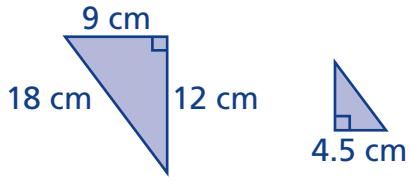


NAME:

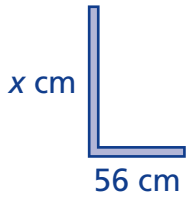
My Turn

Set up proportions to solve these problems. Draw your own figures if needed. Remember to use labels in your proportions and figures.

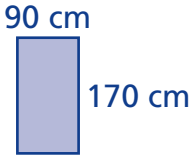
1. The two triangles below are similar. If the shortest side of the smaller triangle is 4.5 cm, how long is its longest side?



2. A large sign was made from an artist's drawing. The measurements of the lines on the letter L on the drawing were 11 cm and 7 cm. The short part of the L on the sign is 56 cm. How long should the long part of the L on the sign be?



3. A door measures 170 cm high by 90 cm wide. If a scale drawing of the door is 4.5 cm wide, how high should the scale drawing be?



Similar Figures

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Multiple Choice Mini Lesson

Fill in the circle next to the answer you choose.

1. The two triangles are similar. How long is the side labeled *x*?

○ 9 units ○ 2 units ○ 4 units ○ 10 units

2. On a scale drawing of a doghouse, the width is 4 inches and the length is 6 inches. If the actual length is 48 inches, what is the actual width?

○ 72 inches ○ 36 inches ○ 46 inches ○ 32 inches

STUDENT PAGE 5 Similar Figures

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NAME:

Writing Task Mini Lesson

Explain how to set up and solve a proportion to show that 40 cm is the correct solution to the following problem.

> A 10 cm by 12.5 cm rectangular picture was enlarged on a copy machine. The longest side of the copy of the picture measures 50 cm. How wide is it?

Similar Figures STUDENT PAGE 6

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