2.5
Similar Figures

What are Proportions?

Proportions are EQUAL RATIOS

$$\frac{3}{5} = \frac{6}{10}$$

Cross Products

How can we tell if two ratios are proportional?

$$\frac{4}{6} = \frac{6}{9}$$

Using Cross Products to Solve Proportions

1) $\frac{x}{25} = \frac{6}{10}$

Using Cross Products to Solve Proportions

2) $\frac{2}{9} = \frac{3}{d}$

Using Cross Products to Solve Proportions

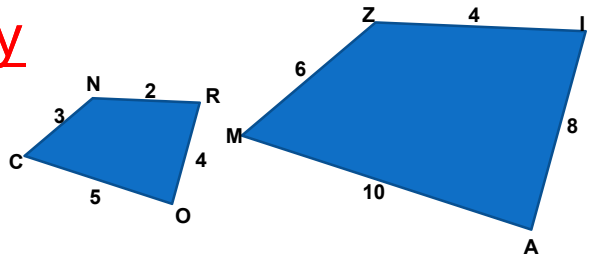
Solve for the missing variable.

3) $\frac{b}{8} = \frac{15}{20}$

4) $\frac{10}{a} = \frac{15}{18}$

Similarity

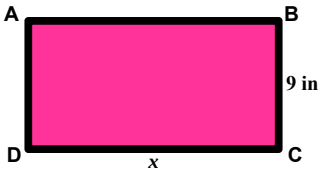
CORN ~ MAIZ

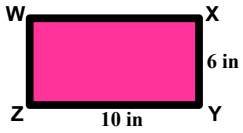


List 3 properties of similar shapes:

- _____
- _____
- _____

FIND MISSING SIDES

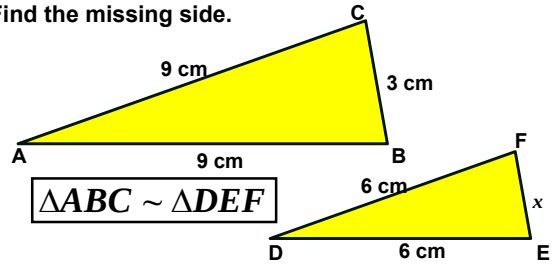




ABCD ~ WXYZ

PRACTICE

Find the missing side.

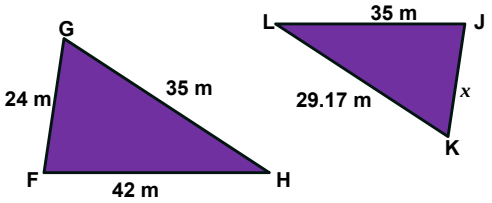


$\Delta ABC \sim \Delta DEF$

PRACTICE

$\Delta FGH \sim \Delta JKL$

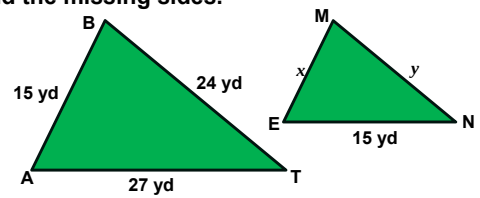
Find the missing side.



PRACTICE

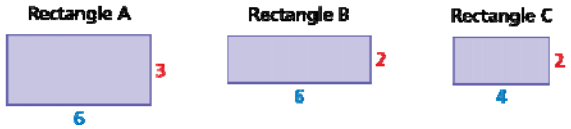
$\Delta BAT \sim \Delta MEN$

Find the missing sides.



Understanding Similarity and Proportions

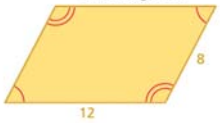
Which rectangle is similar to Rectangle A? Explain and show work.



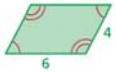
Practice

Which rectangle is similar to Parallelogram A? Explain and show work.

Parallelogram A



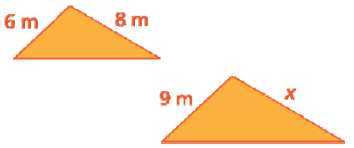
Parallelogram B



Parallelogram C

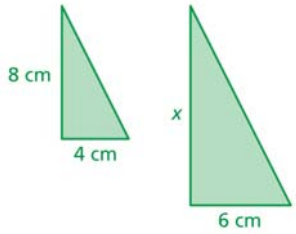
Review – Finding Missing Sides

The triangles are similar. Find *x*.



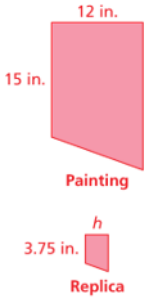
Review – Finding Missing Sides

The triangles are similar. Find *x*.



Applying Similarity and Proportion Concepts

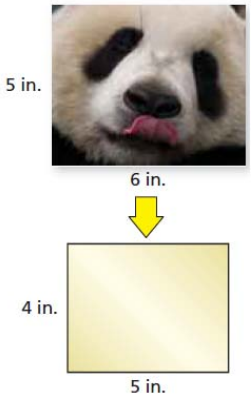
An artist draws a replica of a painting that is on the Berlin Wall. The painting includes a red trapezoid. The shorter base of the similar trapezoid in the replica is 3.75 inches. What is the height *h* of the trapezoid in the replica?



Applying Similarity and Proportion Concepts

Work with a partner. You are trying to reduce the photograph to the indicated size for a nature magazine. Can you reduce the photograph to the indicated size without distorting or cropping? Explain your reasoning.

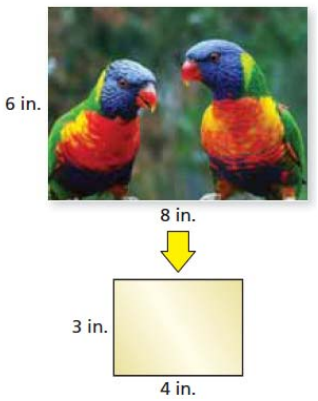
a.



Applying Similarity and Proportion Concepts

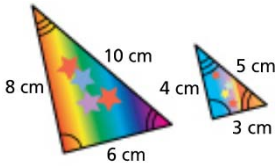
Work with a partner. You are trying to reduce the photograph to the indicated size for a nature magazine. Can you reduce the photograph to the indicated size without distorting or cropping? Explain your reasoning.

b.



Exit Card

1) Are the two triangles similar? Explain.



2) The two triangles are similar. Find *x*.