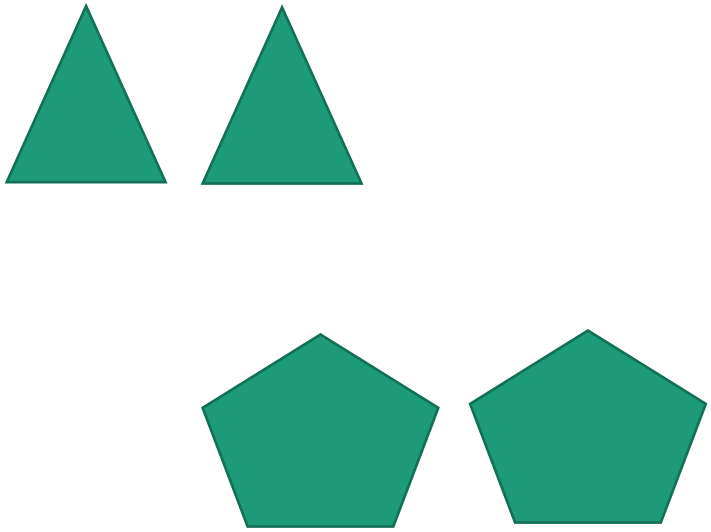
2.1

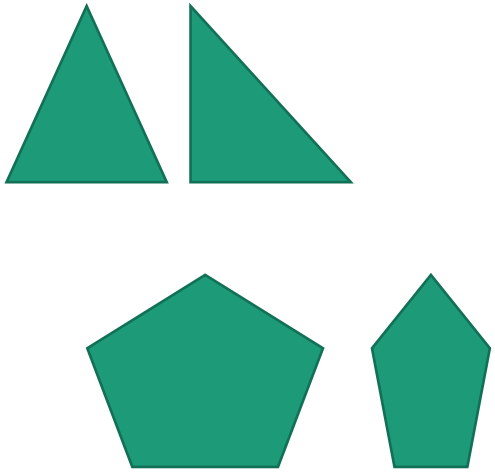
CONGRUENT FIGURES

Do Now

These pairs of shapes are congruent.



These pairs of shapes are NOT congruent.



In your own words, what does congruent mean?

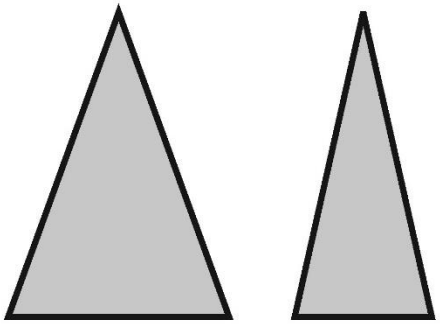
NEW WORD!

CONGRUENT

Objects that have the _____ or _____ _____.

Tell whether the triangles are *congruent* or *not congruent*.

1.



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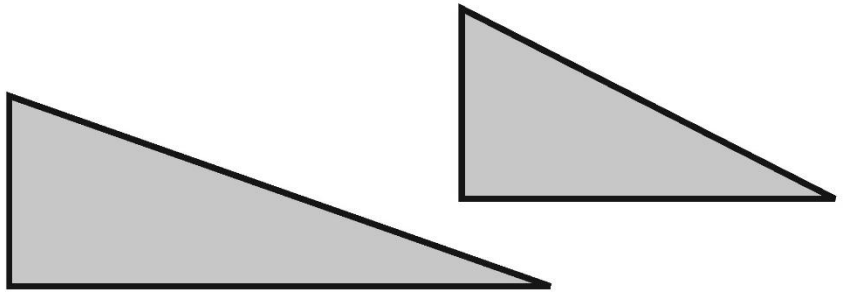

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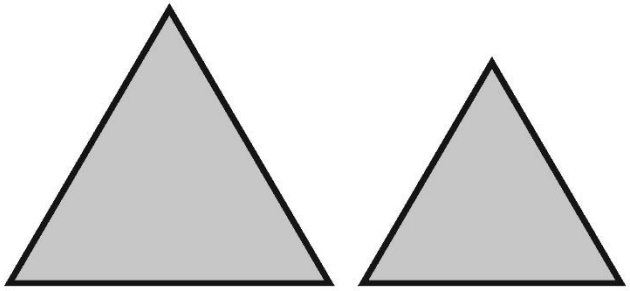

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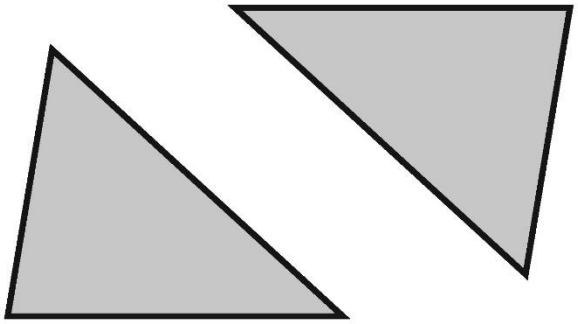
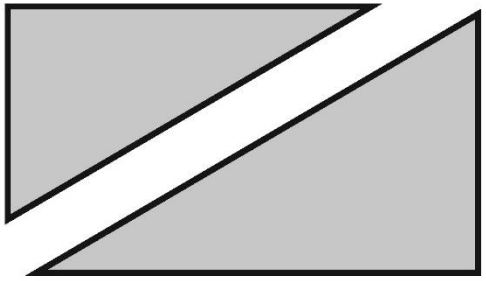
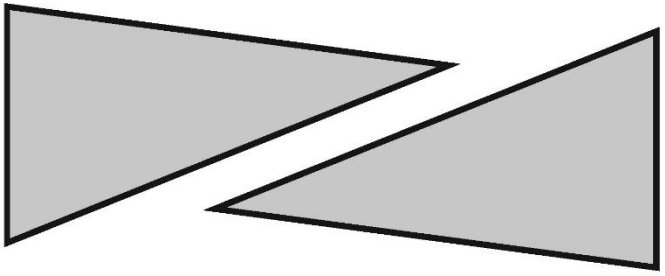


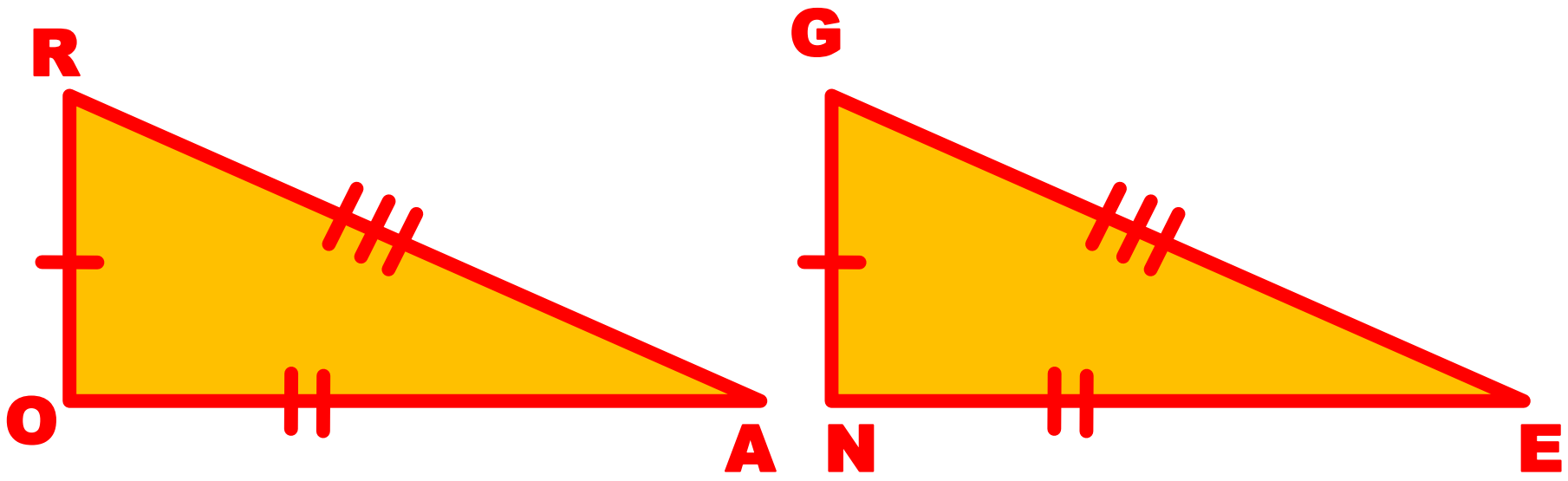
5.



6.

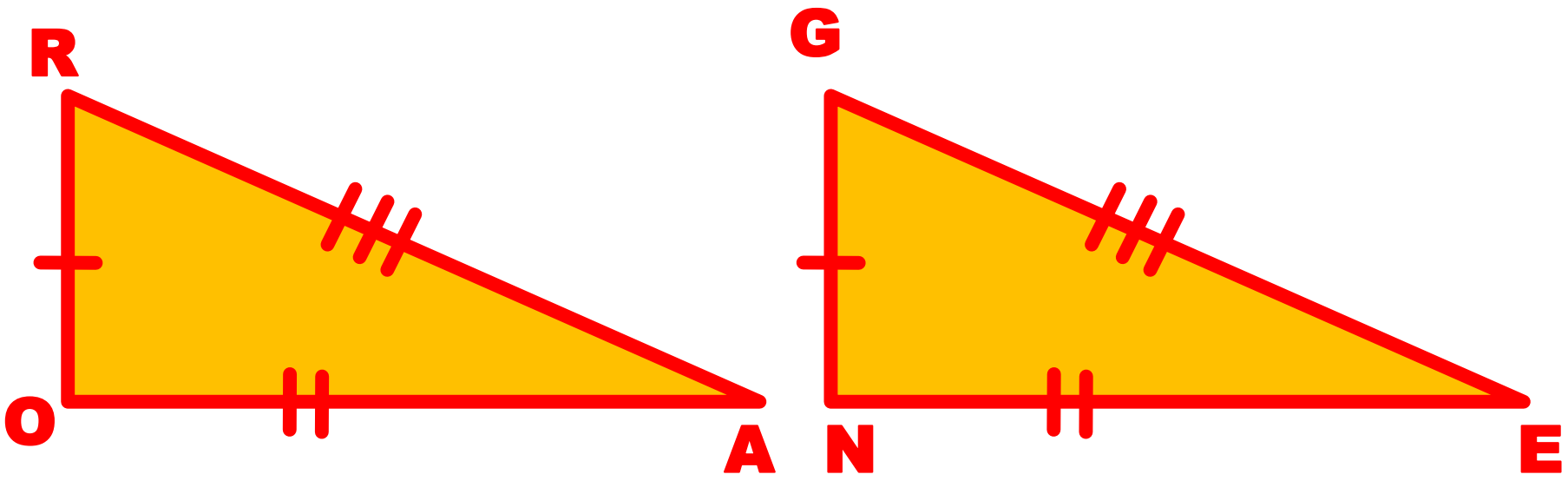


What about congruent shapes?



- Same shape and same size
- *Corresponding* sides are congruent
- *Corresponding* angles are congruent

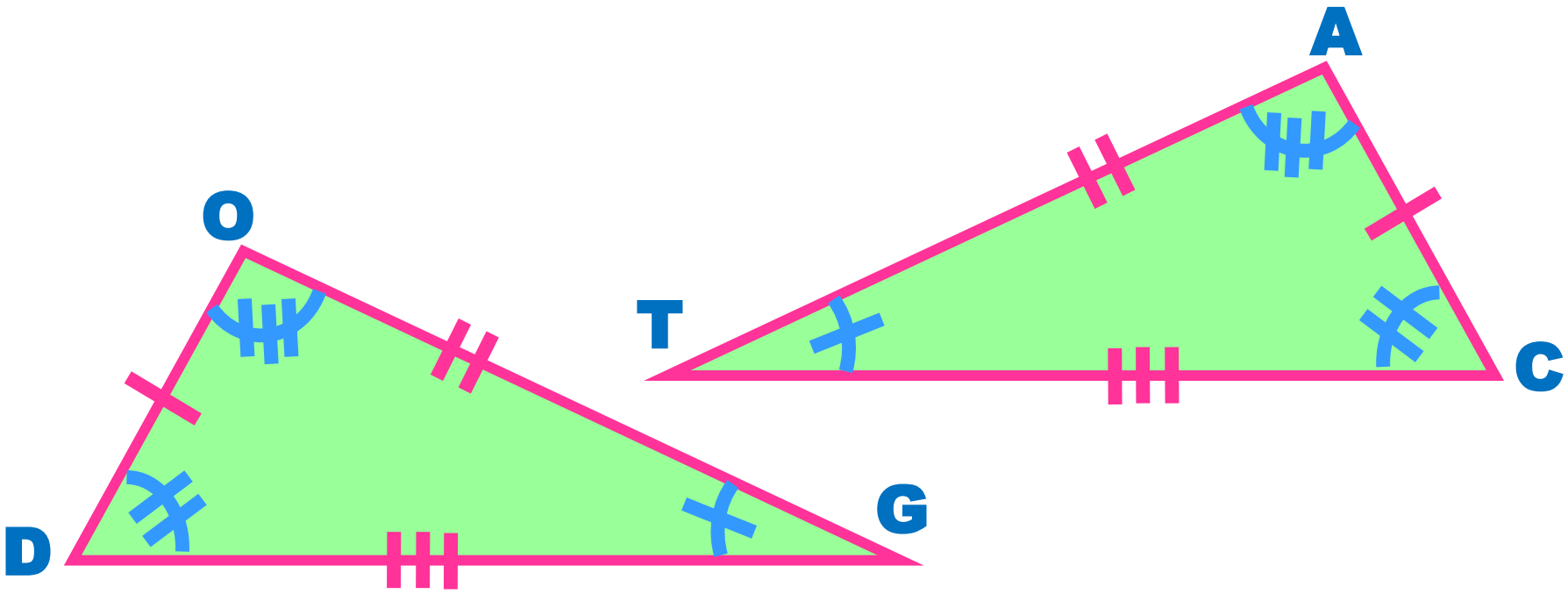
Corresponding Parts of Congruent Figures



Corresponding Angles

Corresponding Sides

Corresponding Parts of Congruent Figures



Corresponding Angles

Corresponding Sides

ACTIVITY

Create FOUR pairs of congruent shapes on the Geo Board

- **Create the congruent shapes**
- **Screenshot it**
- **Put the pictures on Notability**
- **Showbie your activity**

The Four Pairs of Congruent Shapes

1) **First Pair - Normal side-by-side**
2) **Second Pair - One has to be flipped backwards**
3) **Third Pair – One has to be upside-down**
4) **Fourth Pair – Rotated 90 degrees**

Using Cross Products to Solve Proportions

With simplifying

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

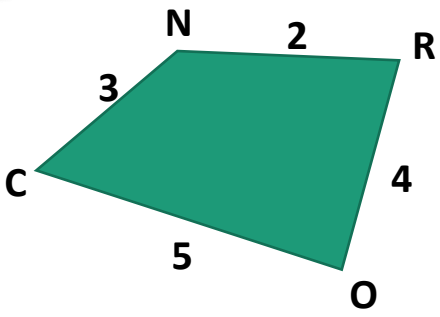
Solve for the missing variable.

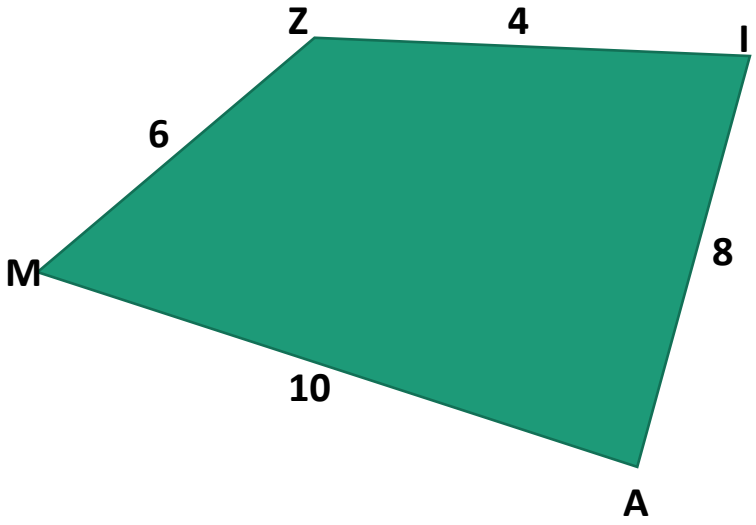
3) $\frac{b}{8} = \frac{15}{20}$

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

Similarity

$CORN \sim MAIZ$

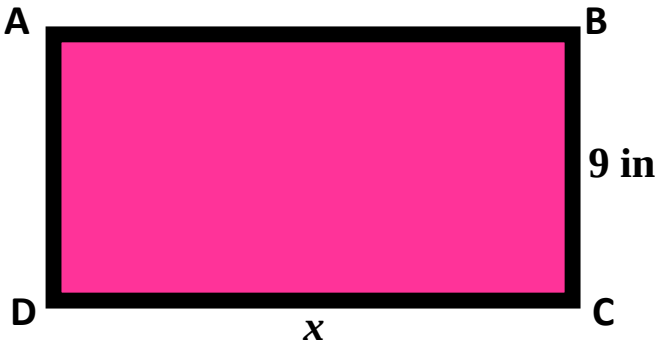


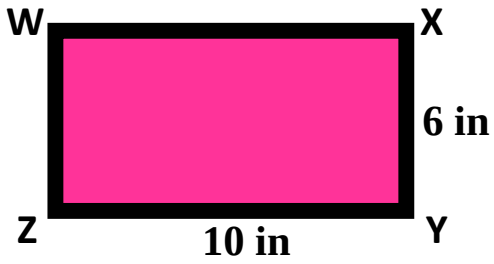


List 3 properties of similar shapes:

- Same shape, different size
- Corresponding angles are congruent
- Corresponding sides are proportional

FIND MISSING SIDES

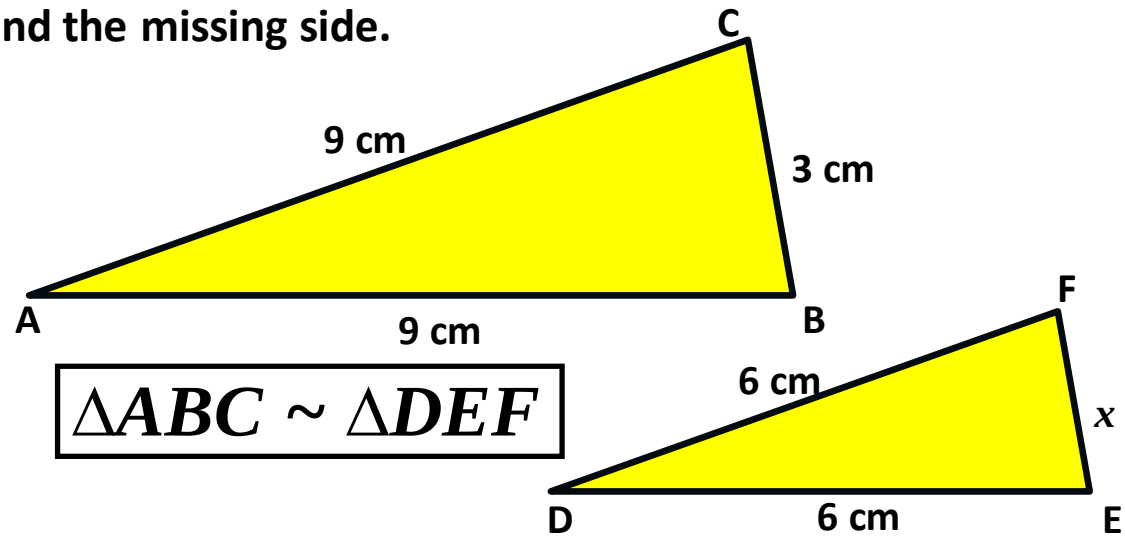




$ABCD \sim WXYZ$

PRACTICE

Find the missing side.

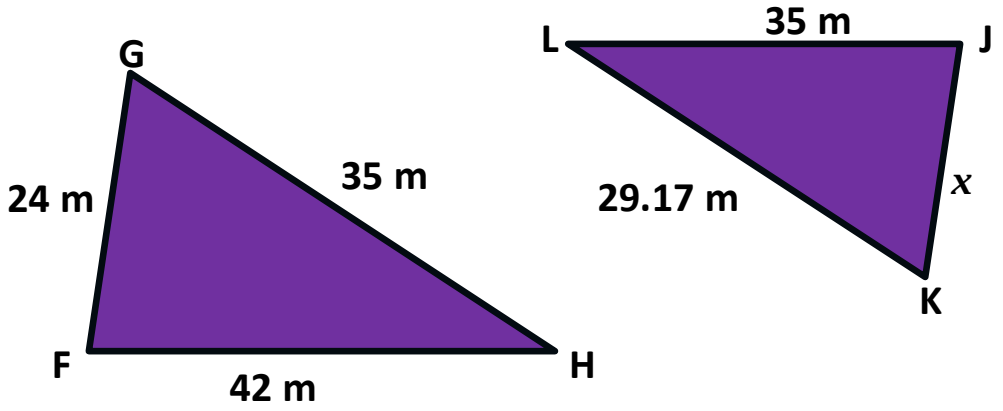


$\Delta ABC \sim \Delta DEF$

PRACTICE

$\Delta FGH \sim \Delta JKL$

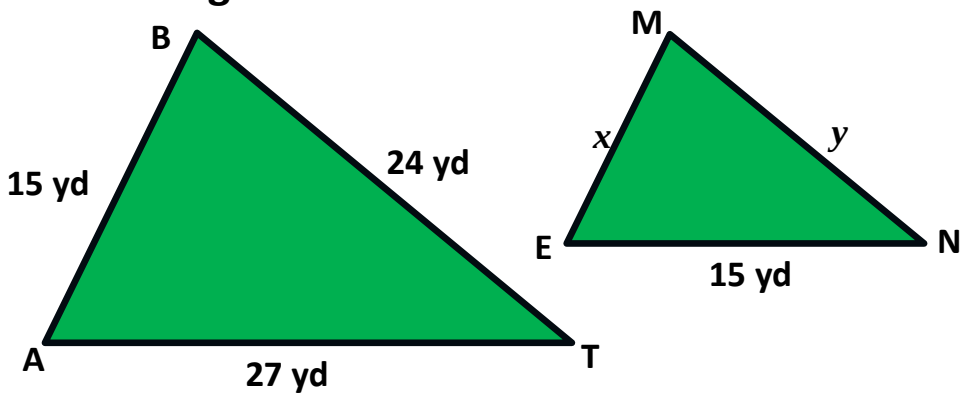
Find the missing side.



PRACTICE

$\Delta BAT \sim \Delta MEN$

Find the missing sides.

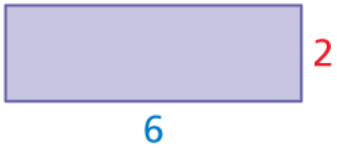


Understanding Similarity and Proportions

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

Rectangle A

Rectangle B

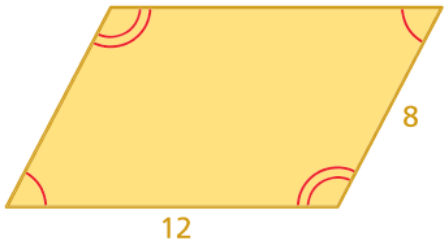


Rectangle C

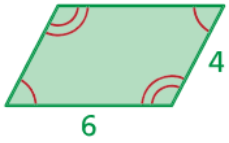
Practice

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

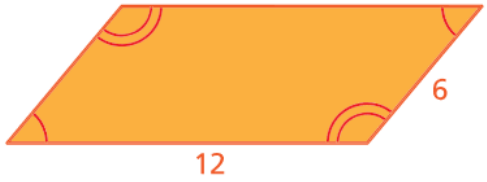
Parallelogram A



Parallelogram B

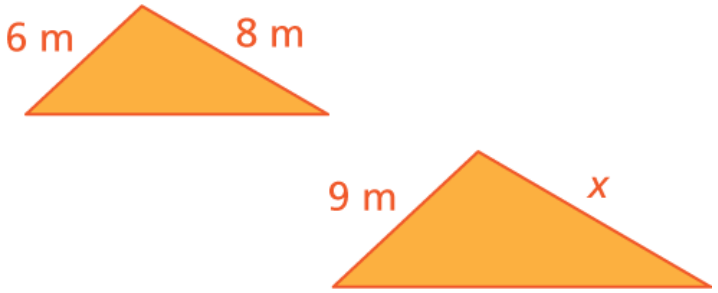


Parallelogram C



Review – Finding Missing Sides

The triangles are similar. Find x.



Review – Finding Missing Sides

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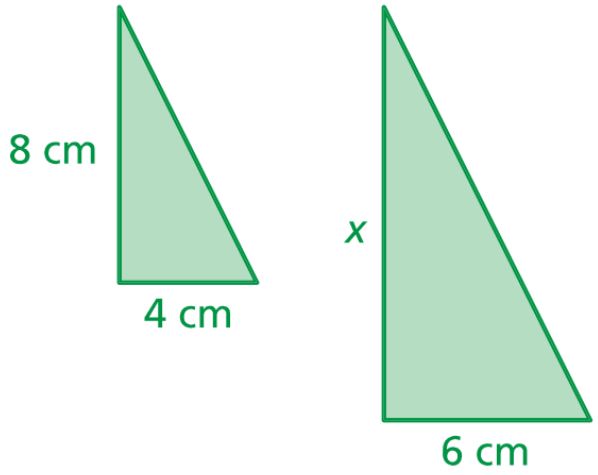
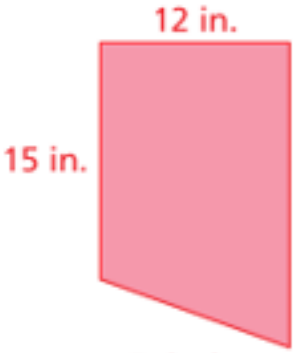


Applying Similarity and Proportion Concepts

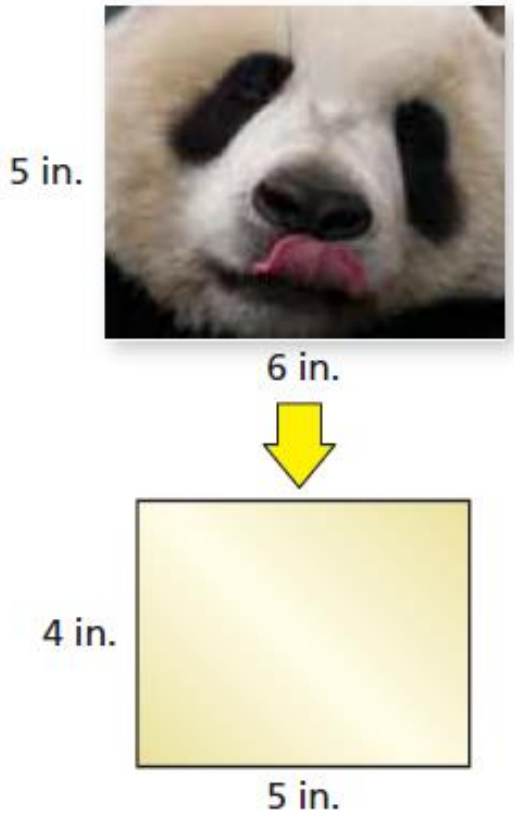
An artist draws a replica of a painting that is on the Berlin Wall. The painting includes a red trapezoid. The shorter base of the similar trapezoid in the replica is 3.75 inches. What is the height h of the trapezoid in the replica?



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.

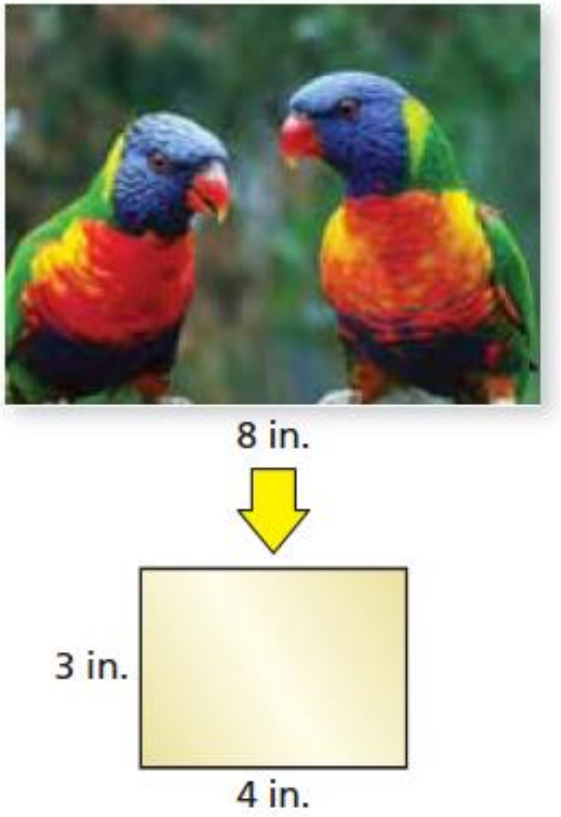
a.



Applying Similarity and Proportion Concepts

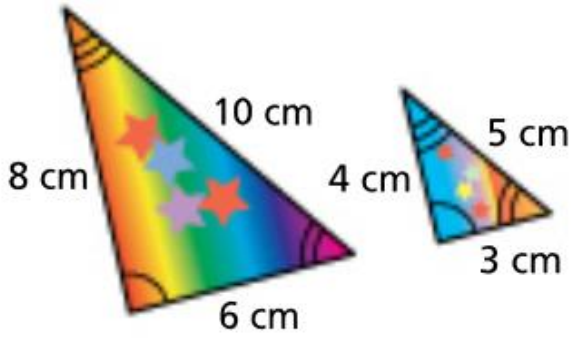
Work with a partner. You are trying to reduce the photograph to the indicated size for a nature magazine. Can you reduce the photograph to the indicated size without distorting or cropping? Explain your reasoning.

b.



Exit Card

1) Are the two triangles similar? Explain.



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