2.1-2.5
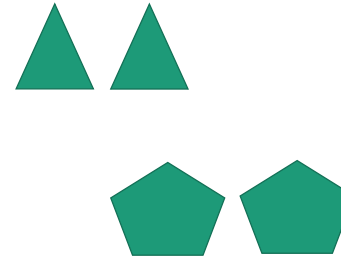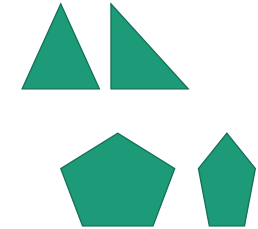
CONGRUENT & SIMILAR FIGURES

These pairs of shapes are congruent. | These pairs of shapes are NOT congruent.

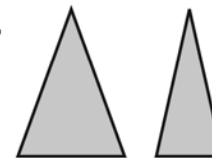In your own words, what does congruent mean?
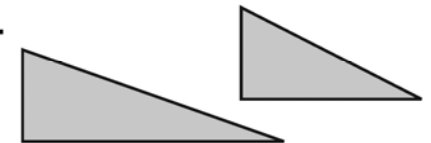
_____

_____

_____

_____

NEW WORD!

CONGRUENT

Objects that have the _____ or _____ _____ .

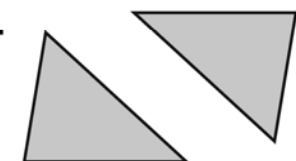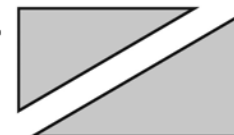Tell whether the triangles are *congruent* or *not congruent.*
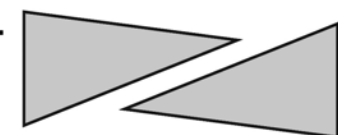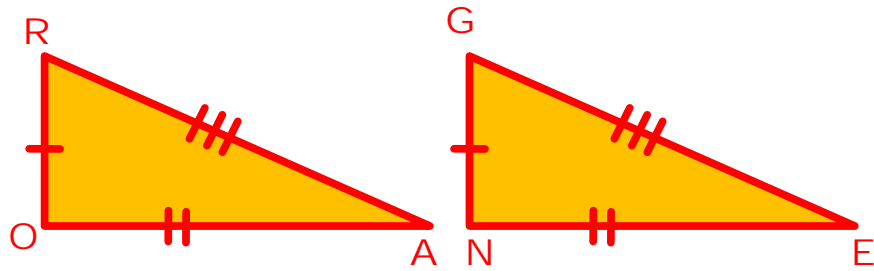
1.

2.

3.

4.

5.

6.

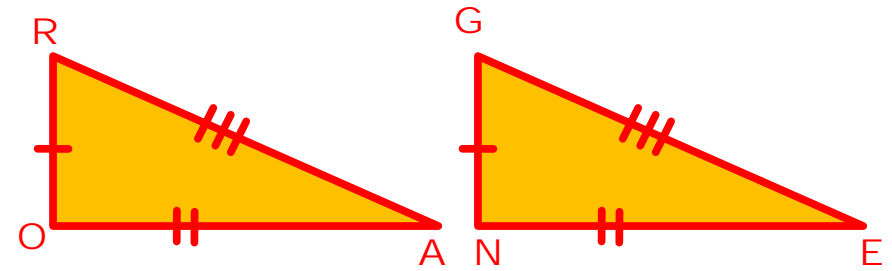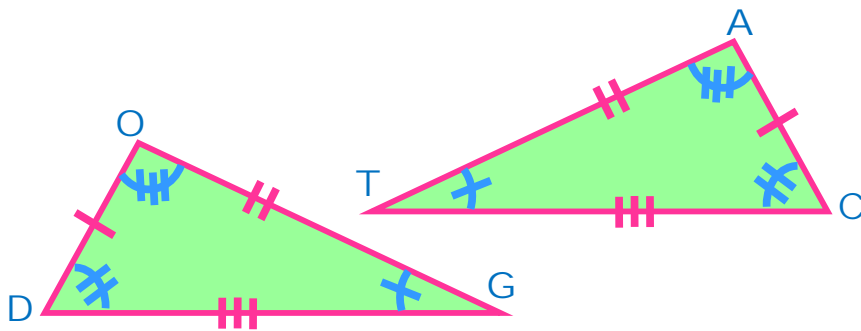## What about congruent shapes?

- **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**

With simplifying

1) $\dfrac{x}{25} = \dfrac{6}{10}$
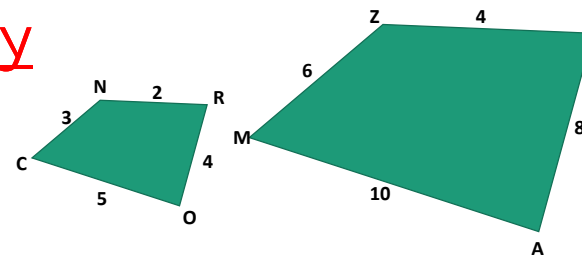
2) $\dfrac{2}{9} = \dfrac{3}{d}$

Solve for the missing variable.

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

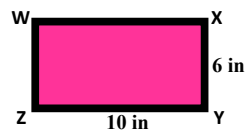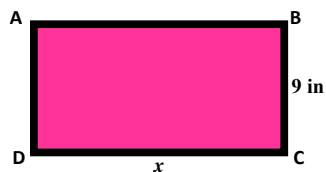4) $\dfrac{10}{a} = \dfrac{15}{18}$

Similarity

$\boxed{CORN \sim MAIZ}$

List 3 properties of similar shapes:

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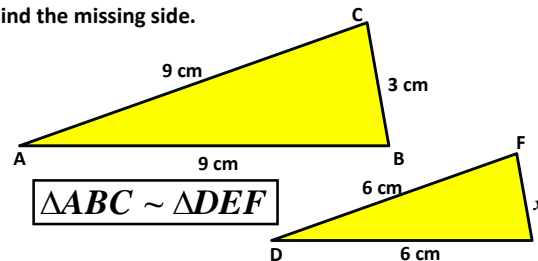- •Corresponding sides are proportional

FIND MISSING SIDES

$ABCD \sim WXYZ$

A B
9 in
D x C

W X
6 in
Z 10 in Y

PRACTICE

Find the missing side.

C
9 cm
3 cm
A 9 cm B

$\triangle ABC \sim \triangle DEF$

F
6 cm
x
D 6 cm E

PRACTICE

Find the missing side.

$\triangle FGH \sim \triangle JKL$

G
24 m   35 m
F   42 m   H

L   35 m   J
29.17 m   x
K
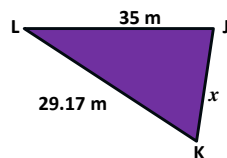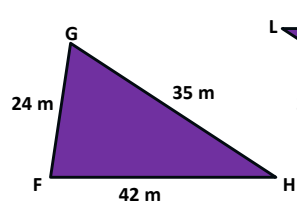
PRACTICE

Find the missing sides.

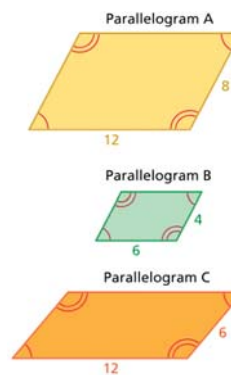$\triangle BAT \sim \triangle MEN$

B
15 yd   24 yd
A   27 yd   T

M
x   y
E   N
15 yd
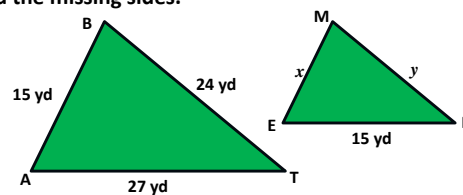
Understanding Similarity and Proportions

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

Rectangle A

3

6

Rectangle B

2

6

Rectangle C

2

4
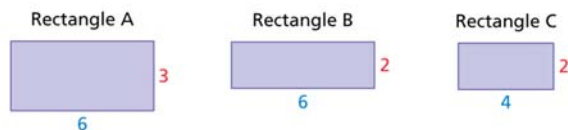
Practice

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

Parallelogram A

8

12

Parallelogram B

4

6
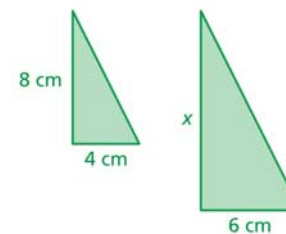
Parallelogram C

6

12

Review – Finding Missing Sides

The triangles are similar. Find x.

6 m   8 m

9 m x

Review – Finding Missing Sides

The triangles are similar. Find x.

8 cm

x

4 cm

6 cm

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?

12 in.

15 in.

Painting

h

3.75 in.

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.

5 in.

6 in.

4 in.

5 in.

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.
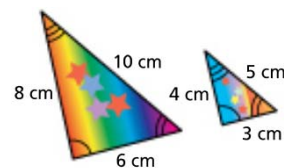
b.

6 in.

8 in.

3 in.

4 in.
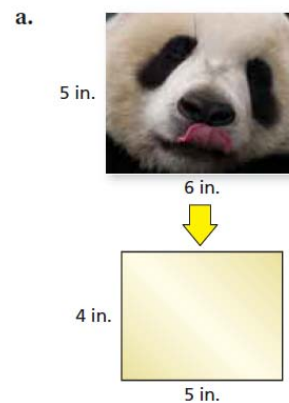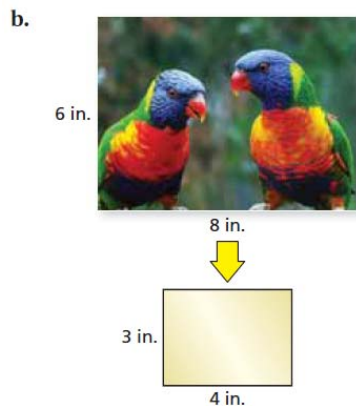
Exit Card

1) Are the two triangles similar? Explain.

10 cm

8 cm

6 cm

5 cm

4 cm

3 cm

2) The two triangles are similar. Find x.

x

3

10

5