

LESSON **7-2 Ratios in Similar Polygons**

Fill in the blanks to complete each definition.

1. A similarity ratio is the ratio of the lengths of the _____ sides of two similar polygons.
2. Two polygons are similar if and only if their corresponding angles are _____ and their corresponding sides are _____.
3. Figures that are similar have the same shape but not necessarily the same _____.

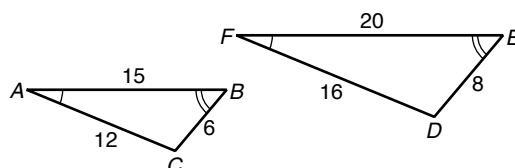
Use the figure for Exercises 4 and 5. The triangles are similar.

4. Name the pairs of congruent angles.

$$\angle A \cong \underline{\hspace{2cm}}$$

$$\angle B \cong \underline{\hspace{2cm}}$$

$$\angle C \cong \underline{\hspace{2cm}}$$



5. Write the corresponding side lengths in the proportion below.

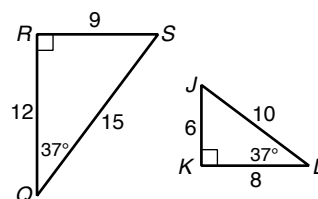
$$\frac{AB}{DE} = \frac{\hspace{1cm}}{\hspace{1cm}} = \frac{\hspace{1cm}}{\hspace{1cm}}$$

Use the figure for Exercises 6 and 7. The triangles are similar.

6. Circle the correct similarity statement.

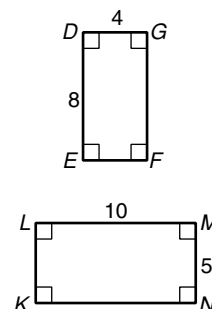
$$\triangle QRS \sim \triangle KJL \quad \triangle RSQ \sim \triangle KJL \quad \triangle QSR \sim \triangle LKJ$$

7. Write a proportion with all three pairs of corresponding side lengths.



Use the figure for Exercises 8 and 9.

8. Tell why the corresponding angles in the rectangles are congruent.



9. Substitute numbers for the side lengths and reduce each ratio to simplest form.

$$\frac{DG}{MN} = \underline{\hspace{2cm}}$$

$$\frac{DE}{LM} = \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

LESSON 7-2 Practice B
Ratios in Similar Polygons

Identify the pairs of congruent corresponding angles and the corresponding sides.

1.
 $\angle A \cong \angle X; \angle B \cong \angle Y; \angle C \cong \angle Z;$
 $\frac{AC}{XY} = \frac{AB}{XZ} = \frac{BC}{ZY} = \frac{2}{3}$

2.
 $\angle H \cong \angle Q; \angle I \cong \angle R; \angle J \cong \angle S;$
 $\frac{KJ}{PS} = \frac{KH}{PQ} = \frac{HI}{QR} = \frac{JI}{SR} = \frac{5}{4}$

Determine whether the polygons are similar. If so, write the similarity ratio and a similarity statement. If not, explain why not.

3. parallelograms $EFGH$ and $TUVW$

 yes; $\frac{7}{5}$; Possible answer:
 $\square EFGH \sim \square TUVW$

4. $\triangle CDE$ and $\triangle LMN$

 No; sides cannot be matched to have corresponding sides proportional.

Tell whether the polygons must be similar based on the information given in the figures.

5.
 yes

6.
 yes

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