

# Similar Figures

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<b>Reporting Category</b>	Measurement
<b>Topic</b>	Determining whether two plane figures are similar, identifying corresponding sides
<b>Primary SOL</b>	7.6 The student will determine whether plane figures—quadrilaterals or triangles—are similar and write proportions to express the relationships between corresponding sides of similar figures.
<b>Related SOL</b>	7.4

## Materials

- Figures: two congruent squares, two similar triangles, two similar trapezoids, and two similar rectangles (templates attached)
- Similar Figures activity sheet (attached)

## Vocabulary

*quadrilateral, triangle, congruent, congruence* (earlier grades)  
*similar figures, corresponding, proportion,  $\sim$*  (7.6)

## Student/Teacher Actions (what students and teachers should be doing to facilitate learning)

1. Display two congruent squares, showing corresponding sides and angles. Review the terms *congruent* and *congruence*. Place one of the squares directly on top of the other square to demonstrate congruence. Use this demonstration to introduce similar figures.
2. Display the two similar triangles separately. Move the smaller triangle on top of the larger to show that all three angles are congruent and the sides are not congruent.
3. Give each student a copy of the Similar Figures activity sheet, and have them identify the corresponding sides and angles of the triangles.
4. Repeat the demonstration with the trapezoids and the rectangles. When displaying the rectangles, rotate one rectangle  $90^\circ$ . Have students complete the activity sheet.
5. Give students several examples of congruent and similar figures to assist in identifying examples of each.
6. Give students additional practice.

## Assessment

- **Questions**
  - What makes two figures similar?
  - How do polygons that are similar compare with polygons that are congruent?
- **Journal/Writing Prompts**
  - Explain whether a figure can be similar with only one corresponding angle congruent.
  - Give a practical example of when you would use a similar figure.
  - Give a practical example of when you would use a congruent figure.

- **Other**
  - Have students create two similar rectangles and write a proportion for corresponding sides.

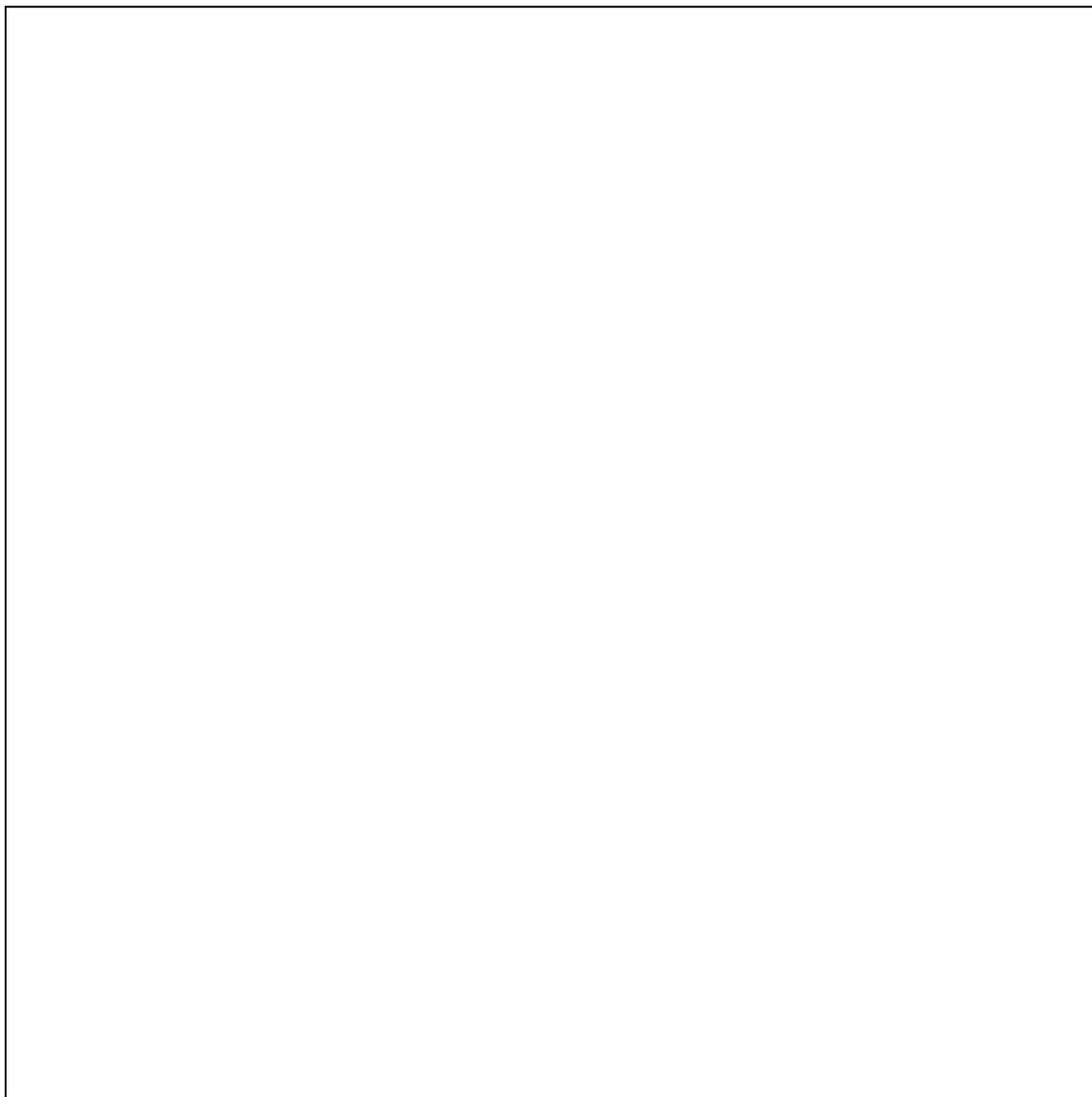
**Extensions and Connections (for all students)**

- Have students find a practical application for similar triangles.

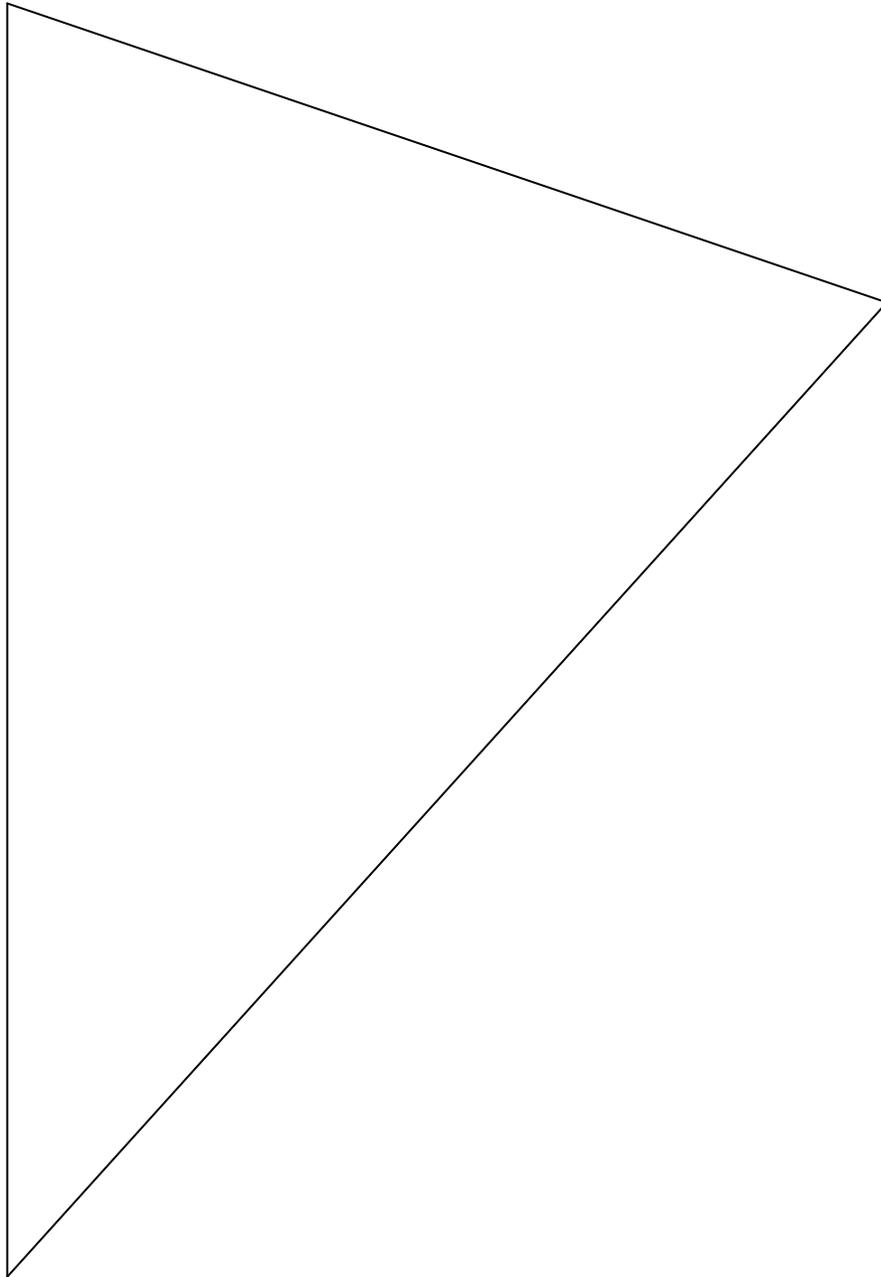
**Strategies for Differentiation**

- Color code corresponding sides and corresponding angles.
- Use a color-coded figure and shadow it with a similar figure of another color to assist in finding corresponding sides and angles.

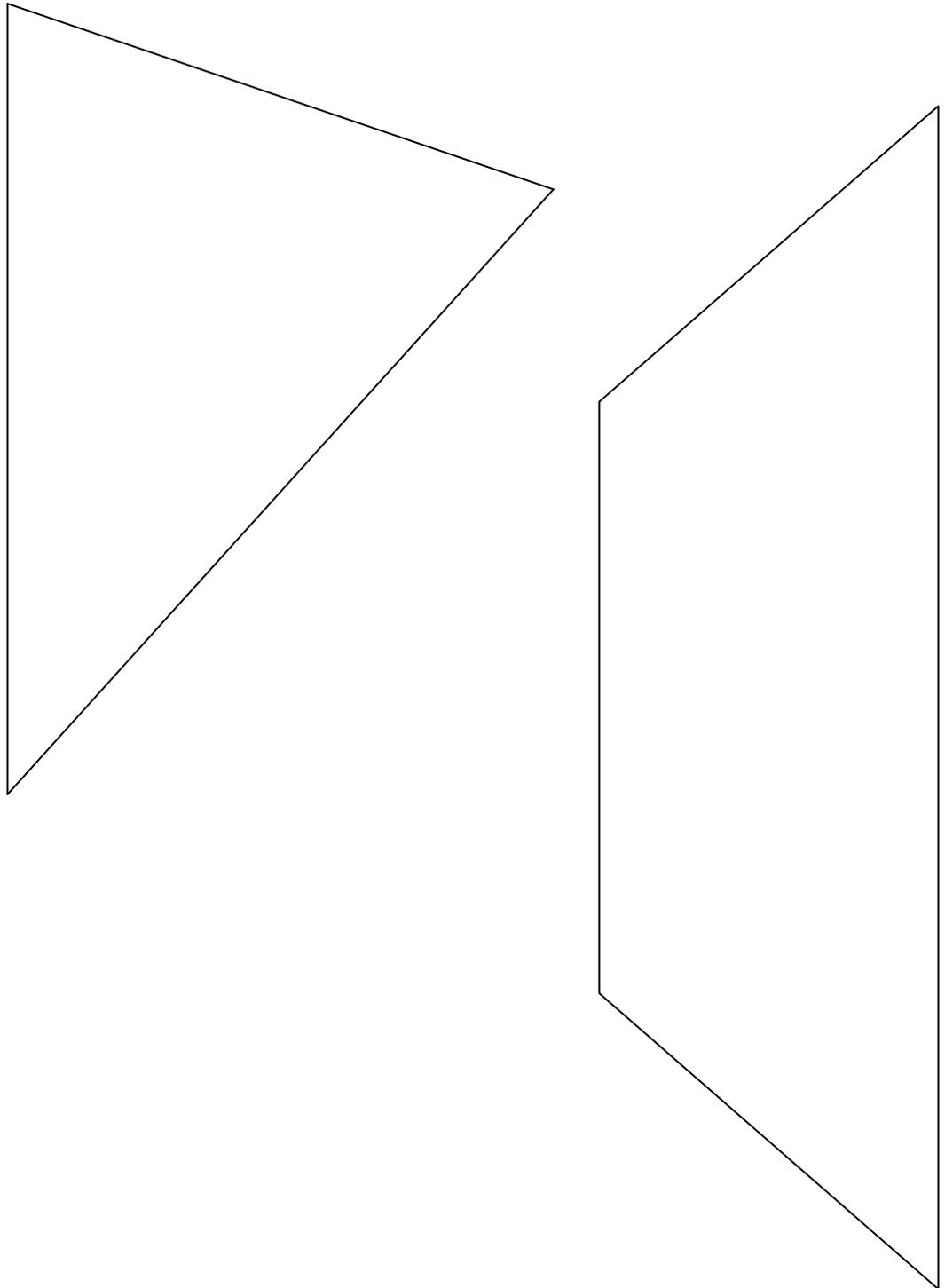
# SQUARE Template



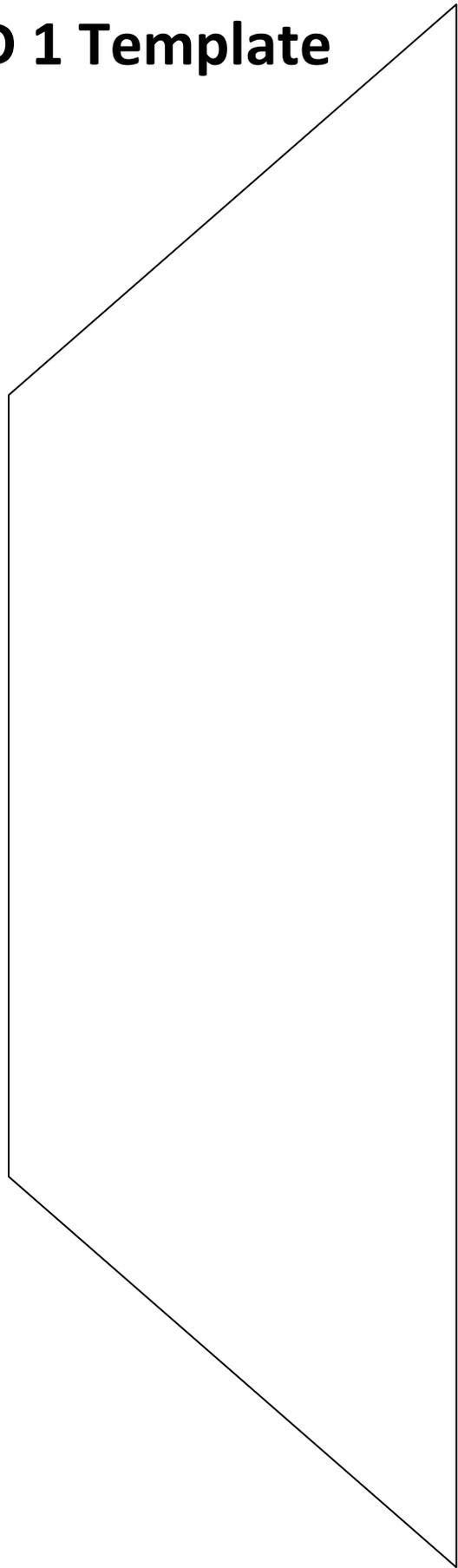
# TRIANGLE 1 Template



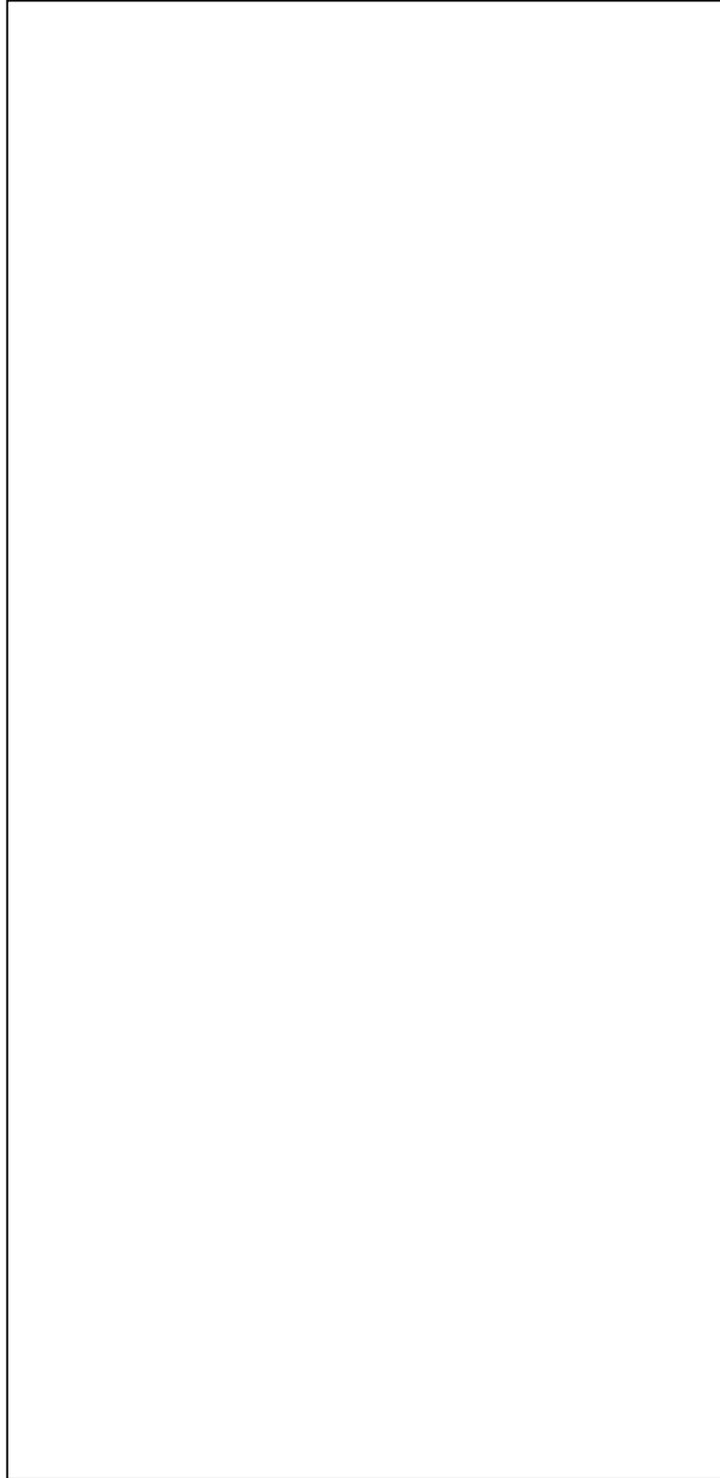
# TRIANGLE 2 / TRAPEZOID 2 Template



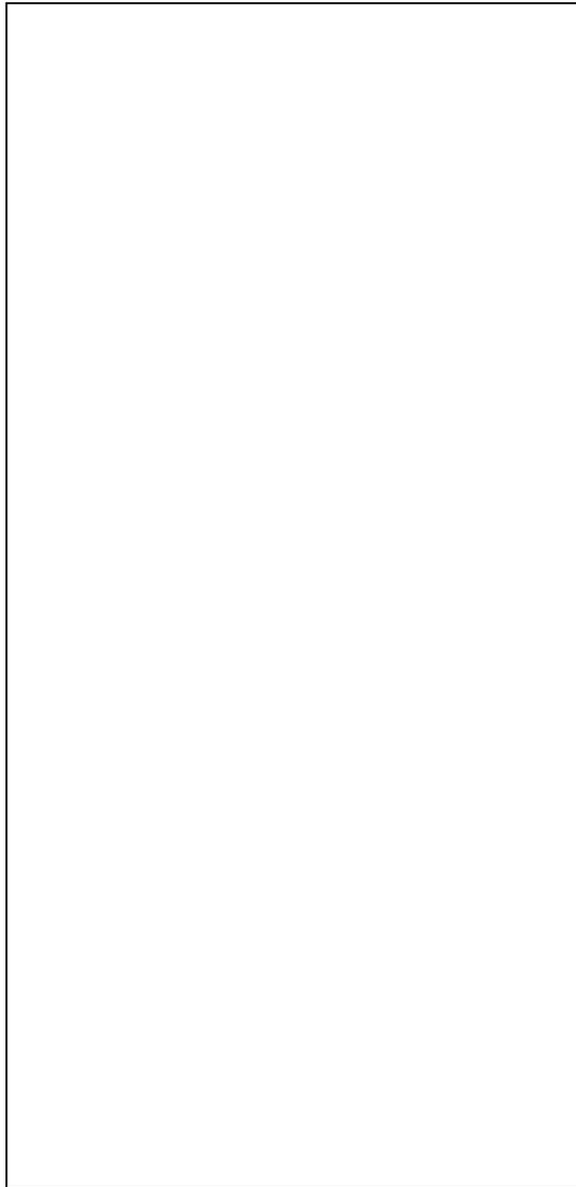
# TRAPEZOID 1 Template



# RECTANGLE 1 Template



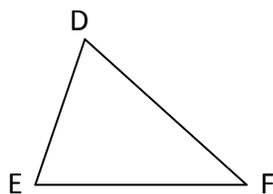
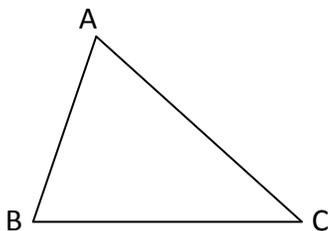
# RECTANGLE 2 Template



# Similar Figures

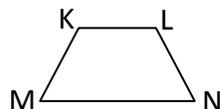
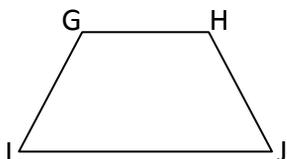
Name \_\_\_\_\_ Date \_\_\_\_\_

## Triangles



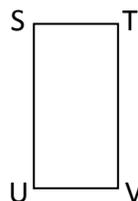
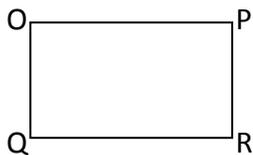
1.  $\angle A$  corresponds to \_\_\_\_\_
2.  $\angle B$  corresponds to \_\_\_\_\_
3.  $\angle C$  corresponds to \_\_\_\_\_
4.  $\overline{AB}$  corresponds to \_\_\_\_\_
5.  $\overline{BC}$  corresponds to \_\_\_\_\_
6.  $\overline{AC}$  corresponds to \_\_\_\_\_

## Trapezoids



1.  $\angle G$  corresponds to \_\_\_\_\_
2.  $\angle H$  corresponds to \_\_\_\_\_
3.  $\angle I$  corresponds to \_\_\_\_\_
4.  $\angle J$  corresponds to \_\_\_\_\_
5.  $\overline{GH}$  corresponds to \_\_\_\_\_
6.  $\overline{GI}$  corresponds to \_\_\_\_\_
7.  $\overline{IJ}$  corresponds to \_\_\_\_\_
8.  $\overline{HI}$  corresponds to \_\_\_\_\_

## Rectangles



Complete each proportion.

1.  $\frac{\overline{ST}}{\overline{SU}} = \frac{\overline{QR}}{\overline{PR}}$
2.  $\frac{\overline{QR}}{\overline{PR}} = \frac{\overline{ST}}{\overline{SU}}$