

§7.2 Similar Polygons

Similar polygons have the but

Definition:

Two polygons are similar if and only if their

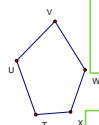
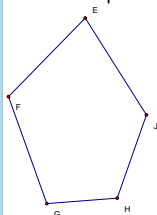
and

their

The symbol is used to mean “is similar to”.

Writing Similarity Statements

Pentagon E J H G F ~ pentagon V W X T U. List the pairs of congruent angles, then write the ratios of corresponding sides in a statement of proportionality.

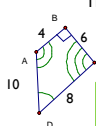
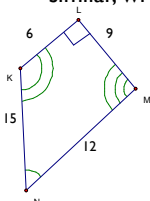


Congruent Angles

Side Ratios

Comparing Similar Polygons

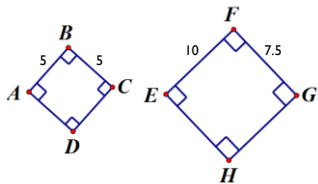
Decide if the figures are similar. If they are similar, write a similarity statement.



The congruent angles seem to lead us to say but to be sure, the to be

Comparing Similar Polygons

Decide if the figures are similar. If they are, write a similarity statement.



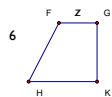
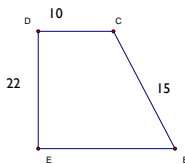
You try it.

List all pairs of congruent angles and write a statement of proportionality for the figures.

1. $\triangle STU \sim \triangle CDE$
2. $\triangle LMN \sim \triangle GHI$
3. quadrilateral QRST \sim quadrilateral ABCD

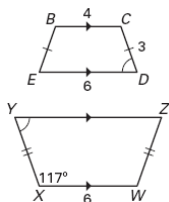
Use Similar Polygons

The quadrilateral BCDE is similar to quadrilateral HFGK. Find the value of z.



You try it.

Quadrilateral $BCDE \sim$ quadrilateral $WXYZ$.
 Find XY . Find $m\angle D$.



Illustrating statements with pictures.

- For each statement, decide if it is *always true*, *sometimes true*, or *never true*. Draw figures to support your answer.
- A square is similar to a rectangle.

Illustrating statements with pictures.

- For each statement, decide if it is *always true*, *sometimes true*, or *never true*. Draw figures to support your answer.
- A triangle is similar to a kite.
