

GOAL Identify similar polygons.**VOCABULARY**

Two polygons are **similar polygons** if corresponding angles are and corresponding side lengths are .

If the two polygons are similar, then the ratio of the lengths of two corresponding sides is called the .

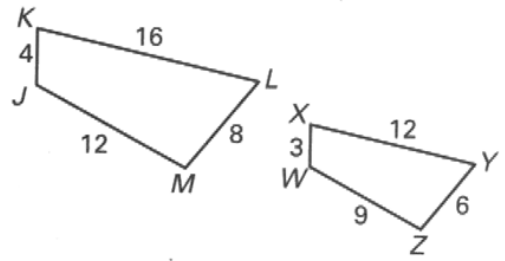
Theorem 7.1 Perimeters of Similar Polygons

If two polygons are similar, then the ratio of their perimeters is equal to the ratio of their corresponding .

EXAMPLE 1 Use Similarity Statements

$$JKLM \sim WXYZ$$

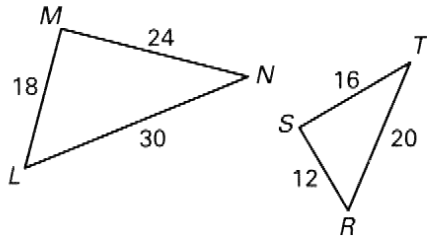
- List all pairs of congruent angles.
- Write the ratios of the corresponding sides in a statement of proportionality.
- Check that the ratios of corresponding sides are equal.



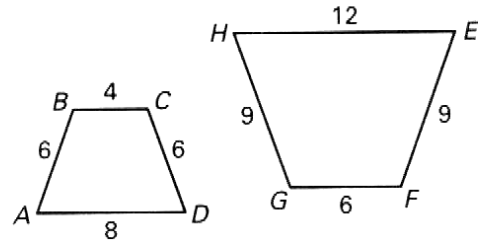
Exercises for Example 1

List all pairs of congruent angles. Write the ratios of the corresponding sides in a statement of proportionality. Then check that the ratios of corresponding sides are equal.

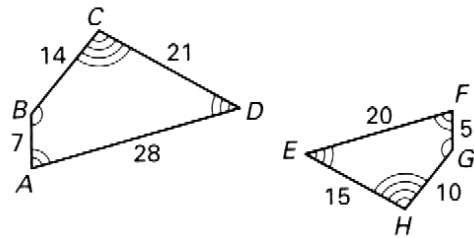
1. $\triangle LMN \sim \triangle RST$



2. $ABCD \sim EFGH$

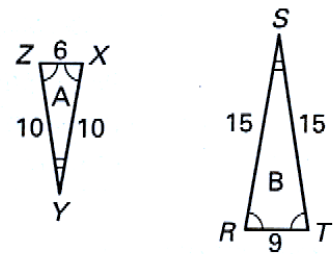
**EXAMPLE 2 Determine whether Polygons are Similar**

Determine whether the quadrilaterals are similar. If they are similar, write a similarity statement and find the scale factor of $FGHE$ to $ABCD$.



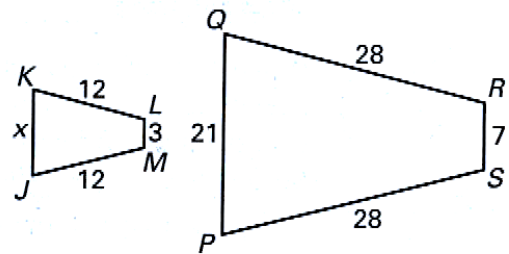
Exercise for Example 2

3. Determine whether the polygons are similar. If they are similar, write a similarity statement and find the scale factor of Figure B to Figure A.



EXAMPLE 3 Use Similar Polygons

In the diagram, $JKLM \sim PQRS$.
Find the value of x .



Exercises for Example 3

In the diagram, $\triangle ABC \sim \triangle XYZ$. Find the value of x .

