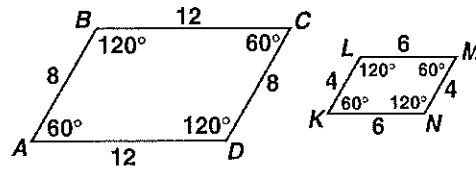


# Reteaching 5-5

## Similar Figures and Proportions

Similar polygons have congruent corresponding angles and corresponding sides that are in proportion. The symbol  $\sim$  means *is similar to*.

*Example:* Is parallelogram  $ABCD \sim$  parallelogram  $KLMN$ ?



- ① Check corresponding angles.
- ② Compare corresponding sides.

$$\angle A \cong \angle K, \angle B \cong \angle L, \angle C \cong \angle M, \text{ and } \angle D \cong \angle N$$

$$\frac{AB}{KL} = \frac{8}{4} = \frac{2}{1} \quad \frac{BC}{LM} = \frac{12}{6} = \frac{2}{1}$$

$$\frac{CD}{MN} = \frac{12}{6} = \frac{2}{1} \quad \frac{DA}{NK} = \frac{8}{4} = \frac{2}{1}$$

Corresponding angles are congruent. Corresponding sides are in proportion. The parallelograms are similar.

You can use proportions to find unknown lengths in similar figures.

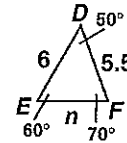
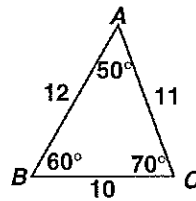
- ① To find  $EF$ , use a proportion.
- ② Substitute.
- ③ Use cross products.
- ④ Solve.

$$\frac{AB}{DE} = \frac{BC}{EF} \quad \triangle ABC \sim \triangle DEF$$

$$\frac{12}{6} = \frac{10}{n}$$

$$12n = 60$$

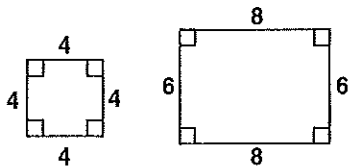
$$n = 5$$



$$EF = 5$$

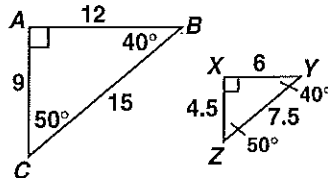
Tell whether each pair of polygons is similar. Explain why or why not.

1.



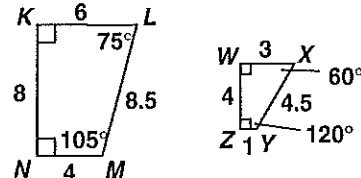
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2.



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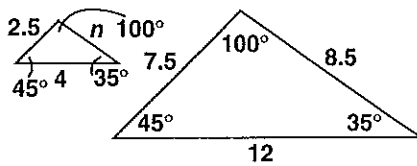
3.



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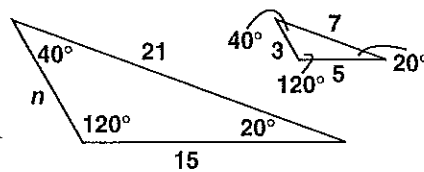
Exercises 4–6 show pairs of similar polygons. Find the unknown length.

4.



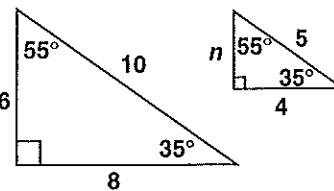
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5.



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6.



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