

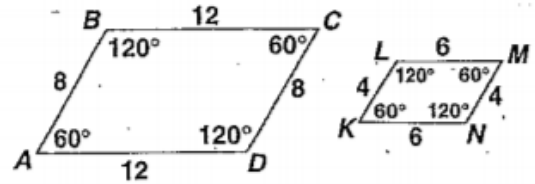
# Are they Similar Figures?

NAME \_\_\_\_\_

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.

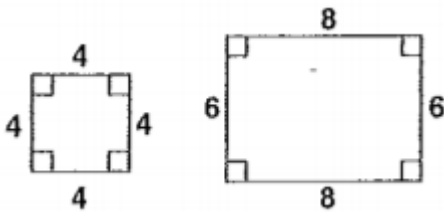
$$\angle A \cong \angle K, \angle B \cong \angle L, \angle C \cong \angle M, \text{ and } \angle D \cong \angle N$$

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

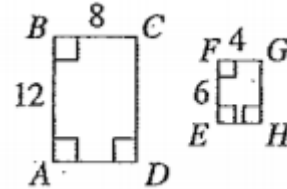
$$\frac{CD}{MN} = \frac{8}{4} = \frac{2}{1} \quad \frac{DA}{NK} = \frac{12}{6} = \frac{2}{1}$$

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

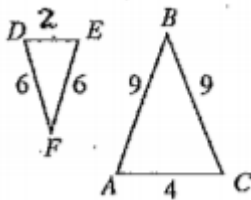
1.



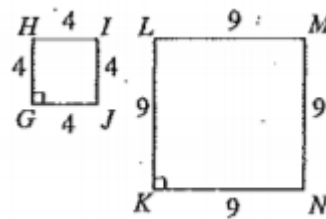
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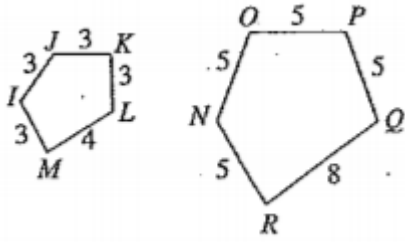
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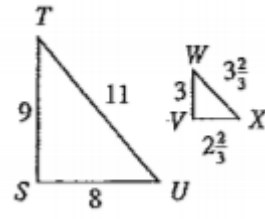
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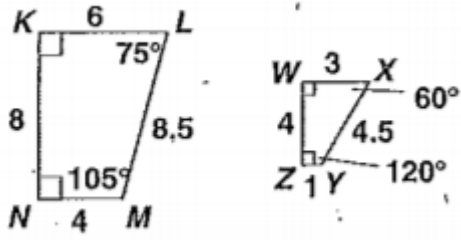
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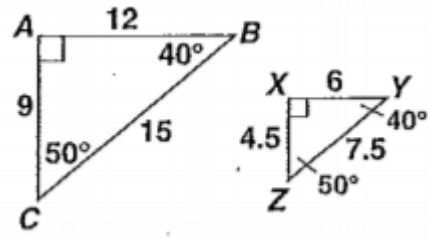
6.



7.



8.



# Find the Missing Side Length

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

① To find  $EF$ , use a proportion.

$$\frac{AB}{DE} = \frac{BC}{EF}$$

$$\triangle ABC \sim \triangle DEF$$

② Substitute.

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

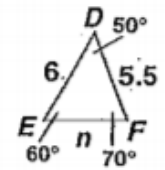
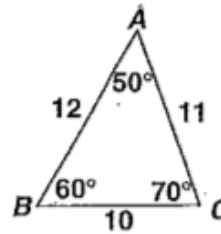
$$12n = 60$$

$$n = 5$$

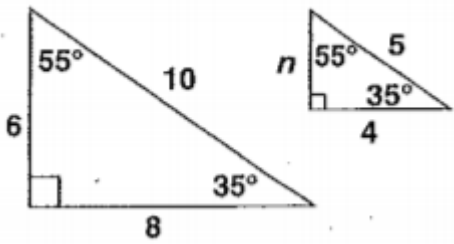
③ Use cross products.

④ Solve.

$$EF = 5$$

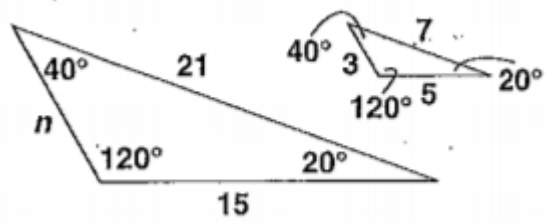


9.



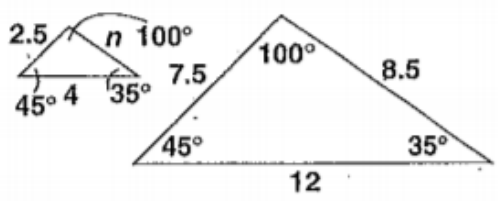
$$n = \underline{\hspace{2cm}}$$

10.



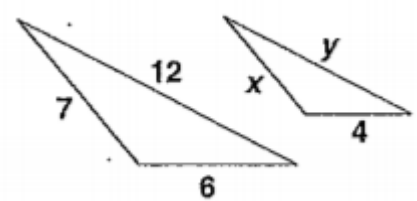
$$n = \underline{\hspace{2cm}}$$

11.



$$n = \underline{\hspace{2cm}}$$

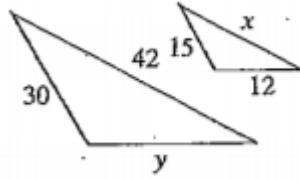
12.



$$x = \underline{\hspace{2cm}}$$

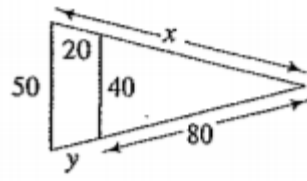
$$y = \underline{\hspace{2cm}}$$

13.



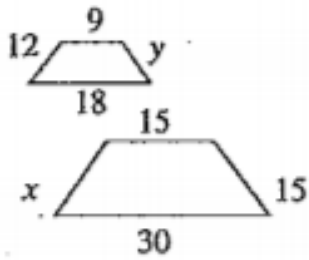
$x = \underline{\hspace{2cm}}$        $y = \underline{\hspace{2cm}}$

14.



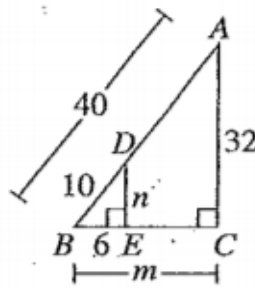
$x = \underline{\hspace{2cm}}$        $y = \underline{\hspace{2cm}}$

15.



$x = \underline{\hspace{2cm}}$        $y = \underline{\hspace{2cm}}$

16.



$x = \underline{\hspace{2cm}}$        $y = \underline{\hspace{2cm}}$