

Use the diagram to complete the statement.

1.  $\triangle ABC \sim \underline{\quad?}$

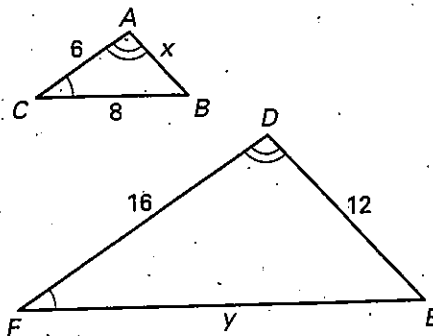
2.  $\frac{AB}{?} = \frac{?}{EF} = \frac{CA}{?}$

3.  $\angle B \cong \underline{\quad?}$

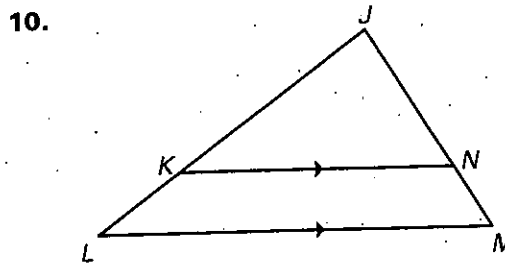
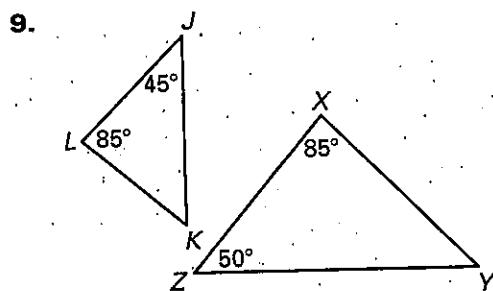
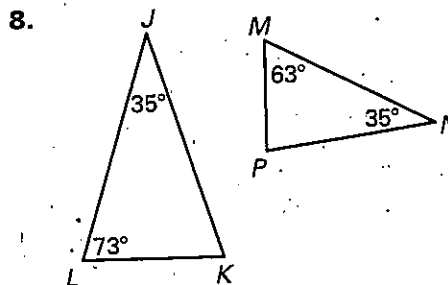
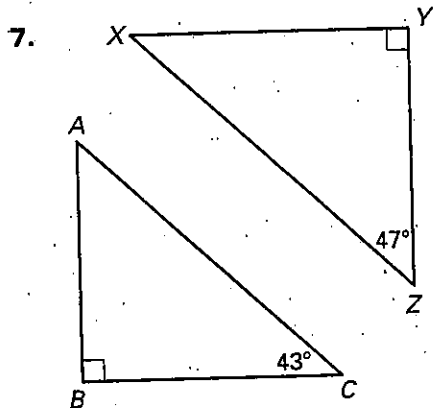
4.  $\frac{?}{12} = \frac{8}{?}$

5.  $x = \underline{\quad?}$

6.  $y = \underline{\quad?}$



Determine whether the triangles are similar. If they are, write a similarity statement.



Sketch the triangles using the given description. Explain whether the two triangles can be similar.

9. The side lengths of  $\triangle ABC$  are 8, 10 and 14.

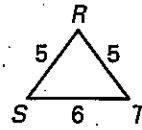
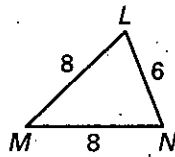
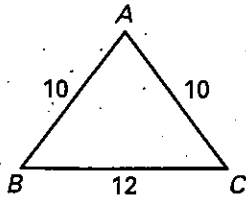
10. In  $\triangle ABC$ ,  $AB = 15$ ,  $BC = 24$  and  $m\angle B = 38^\circ$ .

The side lengths of  $\triangle DEF$  are 16, 20 and 26.

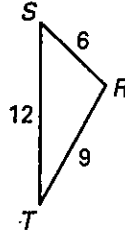
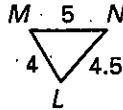
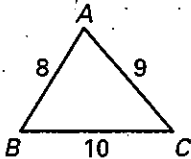
In  $\triangle DEF$ ,  $DE = 5$ ,  $EF = 8$  and  $m\angle E = 38^\circ$ .

Is either  $\triangle LMN$  or  $\triangle RST$  similar to  $\triangle ABC$ ?

1.

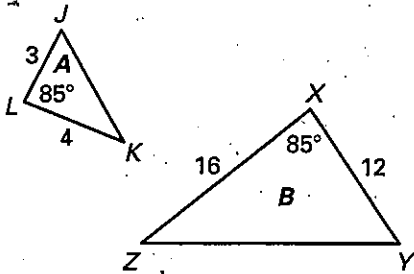


2.



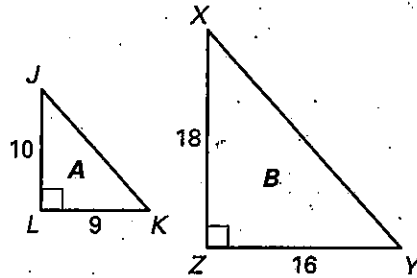
Determine whether the two triangles are similar. If they are similar, write a similarity statement and find the scale factor of  $\triangle A$  to  $\triangle B$ .

3.



Not drawn to scale

4.



In Exercises 15 and 16, use the following information.

**Pine Tree** In order to estimate the height  $h$  of a tall pine tree, a student places a mirror on the ground and stands where she can see the top of the tree, as shown. The student is 6 feet tall and stands 3 feet from the mirror which is 11 feet from the base of the tree.

15. What is the height  $h$  (in feet) of the pine tree?



16. Another student also wants to see the top of the tree. The other student is 5.5 feet tall. If the mirror is to remain 3 feet from the student's feet, how far from the base of the tree should the mirror be placed?