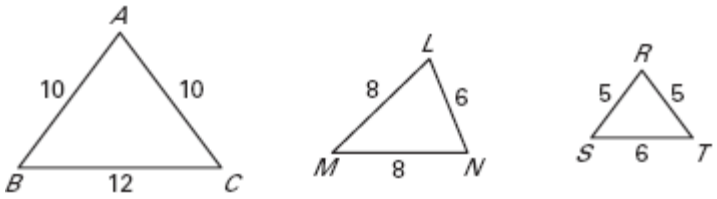
Name _____ Date _____

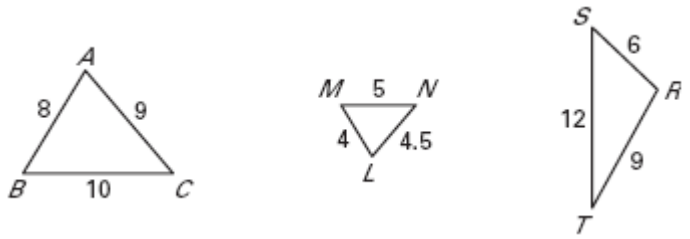
Assignment 53 LESSON 6.4

Is either Δ*LMN* or Δ*RST* similar to Δ*ABC*?

1.

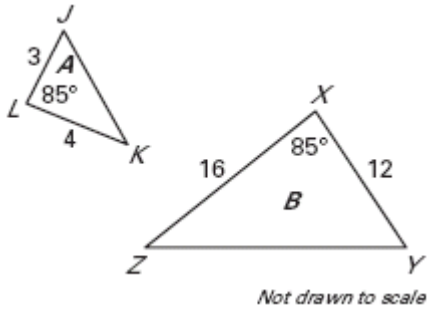


2.

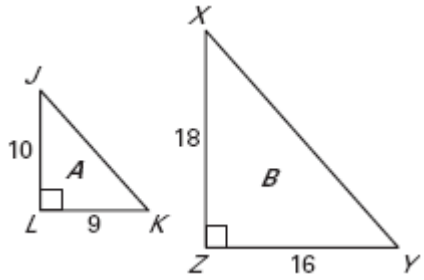


Determine whether the two triangles are similar. If they are similar, write a similarity statement and find the scale factor of Δ*A* to Δ*B*.

3.



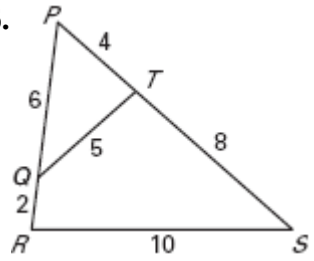
4.



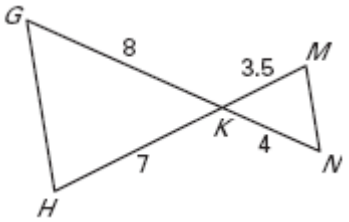
5. Algebra Find the value of m that makes $\Delta ABC \sim \Delta DEF$ when $AB = 3$, $BC = 4$, $DE = 2m$, $EF = m + 5$, and $\angle B \cong \angle E$.

Show that the triangles are similar and write a similarity statement. *Explain* your reasoning.

6.



7.



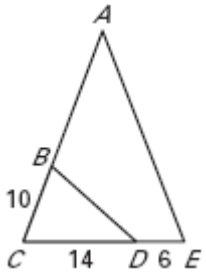
8. Multiple Choice In the diagram at the right, $\Delta ACE \sim \Delta DCB$. Find the length of AB.

A. 12.

B. 18

C. $\frac{35}{2}$

D. $\frac{30}{7}$



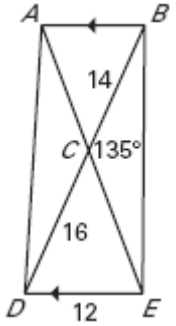
In Exercises 9-12, use the diagram at the right to copy and complete the statement.

9. $\Delta ABC \sim$ __?__

10. $m\angle DCE =$ __?__

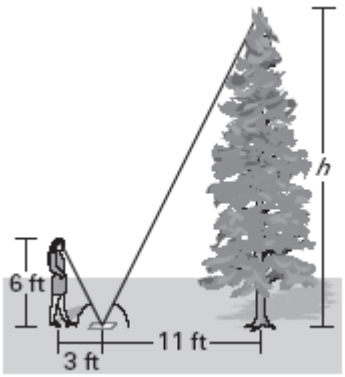
11. $AB =$ __?__

12. $m\angle CAB + m\angle ABC =$ __?__



In Exercises 13 and 14, 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.



13. What is the height *h* (in feet) of the pine tree?

14. 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?