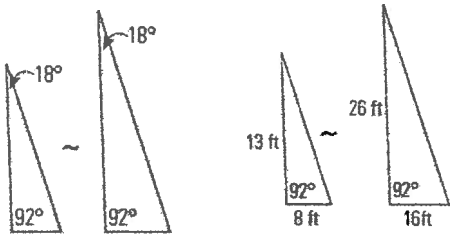
Name: _____

AWM10 **Ch. 6.4 Similar Triangles** Notes

Section 6.2 defined that two figures are similar if their corresponding sides are proportional to each other and their corresponding angles are the same. The same rules apply to triangles, but you can determine if they are similar by using even less information.

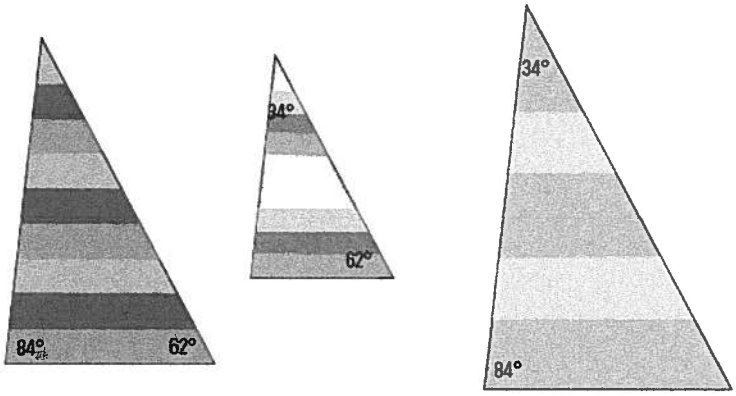
Two triangles are **similar** if one of the two following requirements is true.

- Any **two** of the three **corresponding angles** are equal
- One pair of corresponding angles is congruent and the corresponding sides adjacent to these angles are proportional.



Example 1

Are any of the following triangles similar?



Example 2

Sven is designing a T-shirt and wants to use several triangles in her design. She drew triangle ABC below to represent the triangular shape she wants to use in her design. The side lengths of the triangle are as follows:

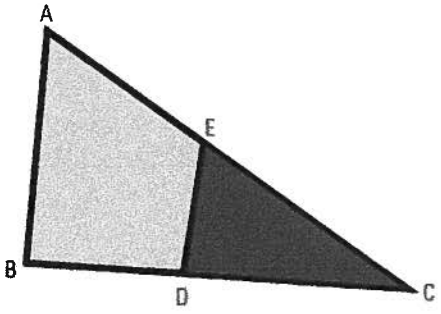
AB = 4

BC = 5

AC = 6

DC = 2.5, and

EC = 3

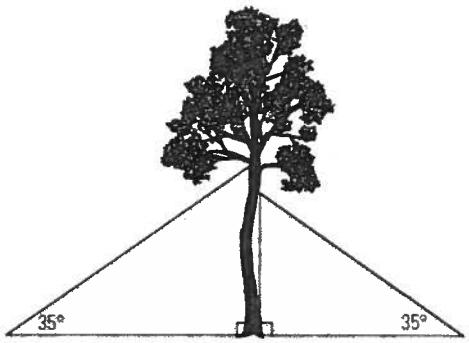


Find the length of ED.

Example 3

Roberto and Marcos tie wires to either side of an artificial tree as part of the set-up of a concert stage. They decide to attach the wires so that they both make a 35° angle within a right triangle.

Are the right triangles created by the wires similar triangles?



Example 4

Given that ΔABC in similar to ΔRST, AB is 6 cm long, BC is 5 cm long, and RS is 8 cm long, find the length of a second side in ΔRST. Can you find the length of the third side? Explain your answer.

Example 5

Ravi notices that a 2-m pole casts a shadow of 5 m, and a second pole casts a shadow of 9.4 m. How tall is the second pole? (sketch the situation)