

Lesson Summary

The following conditions produce identical triangles:

What Criteria Produce Unique Triangles?

Criteria	Example

Problem Set

1. Draw three different acute triangles XYZ , $X'Y'Z'$, and $X''Y''Z''$ so that one angle in each triangle is 45° . Label all sides and angle measurements. Why are your triangles not identical?
2. Draw three different equilateral triangles ABC , $A'B'C'$, and $A''B''C''$. A side length of $\triangle ABC$ is 3 cm. A side length of $\triangle A'B'C'$ is 5 cm. A side length of $\triangle A''B''C''$ is 7 cm. Label all sides and angle measurements. Why are your triangles not identical?
3. Draw as many isosceles triangles that satisfy the following conditions: one angle measures 110° , and one side measures 6 cm. Label all angle and side measurements. How many triangles can be drawn under these conditions?
4. Draw three nonidentical triangles so that two angles measure 50° and 60° and one side measures 5 cm.
 - a. Why are the triangles not identical?
 - b. Based on the diagrams you drew for part (a) and for Problem 2, what can you generalize about the criterion of three given angles in a triangle? Does this criterion determine a unique triangle?