Lesson 8: Drawing Triangles

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 $△ABC$ is $3 cm$. A side length of $△A'B'C'$ is $5 cm$. A side length of $△A''B''C''$ 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 $5 cm$.
	1. Why are the triangles not identical?
	2. 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?