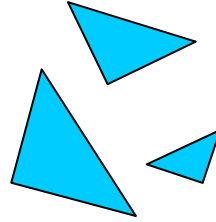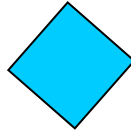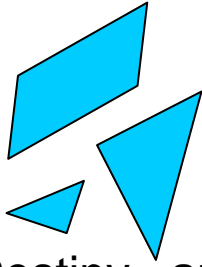# Patterns by Design

Destiny and Desi are designing quilting square patterns for a geometry project at Childs Middle School. They have decided to cut pieces of fabric using the seven Tangram shapes as patterns. Their design for each quilting square will be a triangle formed from the Tangram shapes.

Destiny asks Desi, "How many different-sized triangles can we make using one set of Tangram shapes? Will the triangles have the same shape?"

Desi replies, "I don't know. Let's use a set of Tangrams to explore the possibilities."

1. Use a set of Tangram shapes to answer Destiny's questions.

2. Compare the corresponding angles and corresponding sides of the different-sized triangles. What do you observe?

3. What is the relationship between the ratio of corresponding sides and corresponding perimeters for any two different-sized triangles?

4. What is the relationship between the ratio of corresponding sides and corresponding areas for any two different-sized triangles?