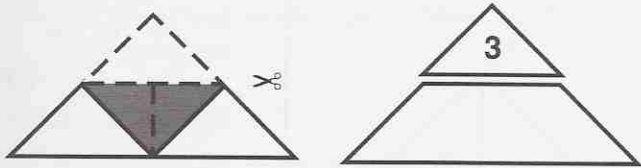


5. Take the vertex of the right angle of the triangle and fold it down to the midpoint of the hypotenuse. (The vertex of the right angle should meet at the intersection of the hypotenuse and the first fold line.) Cut along the new fold line.

- What two shapes are formed? [A triangle and a trapezoid.]



Label this triangle "3."

- How is triangle 3 similar to triangles 1 and 2? [It has a right angle.]
- How is triangle 3 different from triangles 1 and 2? [It's smaller.]
- Are the shapes the same? [Yes.] Figures having the same shape with corresponding congruent angles are *similar*. Triangle 3 is the medium triangle of the tangram.

6. Show the trapezoid with the longer side at the bottom.

- Does it contain any right angles? [No.]
- Are any of the angles congruent to any other angles? [Yes.]
- How do you know? [The smaller angles of shapes 1, 2, and 3 fit over the smaller angles of the trapezoid.] Now fold one lower corner of the trapezoid so that it falls on the midpoint of the longest side of the trapezoid. Crease it and then cut along the fold line.



- What is the shape of the piece that is cut off? [A triangle.] Label it "4."
- What does the remaining shape look like? [A trapezoid with a right angle.] Cut off the square along the fold line and label it "5."

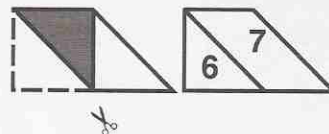


- What kind of angles are in the square? [Right angles.]

- What does the final remaining shape look like? [A trapezoid with a right angle.]



- Are there any other types of angles in this shape? [*Acute* and *obtuse* angles.]
7. Fold the vertex of the right angle up to the vertex of the obtuse angle. Crease it. Cut along the fold line.



- What two pieces are formed? [A triangle and a *parallelogram*.]

8. Label the triangle "6" and the parallelogram "7."



- Are there any right angles in the parallelogram? [No.]
- What kinds of angles are in the parallelogram? [*Acute* and *obtuse* angles.]

Ask older students:

- Can you figure out how many degrees in the acute angle? [It's the same size as the smaller angle in the right triangle which is  $45^\circ$ .]
- Can you figure out the measure of the obtuse angle? [Since a right angle and a  $45^\circ$  can fit into the obtuse angle, its measure is  $90^\circ + 45^\circ = 135^\circ$ .]
- What can you say about triangles 4 and 6? [Same size and shape; they're *congruent*.]



- What can you say about triangles 3 and 4? [Same shape but different size; they're *similar*.]



- What can you say about triangles 1 and 4? [Same shape but different size; they're *similar*.]

