

## EXPLORATION 8.8    **Weird Triangles<sup>1</sup>**

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Many teachers have done this exploration with middle school students. There is much food for thought for college students too in this exploration—from geometric ideas to problem-solving to reasoning.

Take a blank piece of paper. Fold it in half and then fold it in half again.

Draw a “weird” triangle—that is, any triangle—and then cut it out. You should now have four congruent triangles.

For each of the following questions, explain your reasoning.

1. Can you put these triangles together to make a large triangle?
2. Is there only one way, or are there different ways?
3. How could you prove that the new triangle is actually a triangle, as opposed to a figure that is almost a triangle?
4. Does the new large triangle have anything in common with the original triangle?
5. Repeat this activity with other weird triangles until you are satisfied with your responses to the four questions.

<sup>1</sup>This exploration is adapted from a talk by Glenda Lappan entitled “The Connected Mathematics Project: Reaching All Kids Through Interesting Problems and New Instructional Strategies,” given at the New Hampshire ATMNE meeting in Plymouth, New Hampshire, on April 1, 1994.

<sup>2</sup>Cited in Julian Weissglass, *Exploring Elementary Mathematics* (Dubuque, Iowa: Kendall Hunt Publishing, 1990), p. 161.