

Inequalities for Sides and Angles

NAME _____

During this activity, you will examine the relationship between the locations of sides and angles in a triangle.

1. Use a ruler to draw scalene $\triangle ABC$, such that \overline{AB} is the longest side and \overline{AC} is the shortest side.

2. Measure each side to the nearest tenth of a centimeter, and measure each angle to the nearest degree. Indicate these measurements on your drawing above.

3. Describe the relationship between the location of the longest side and the location of the largest angle of scalene $\triangle ABC$.

4. Describe the relationship between the location of the shortest side and the location of the smallest angle of scalene $\triangle ABC$.

5. For any triangle, the longest side must be opposite the largest angle, and the shortest side must be opposite the smallest angle. Explain why it would be impossible to draw a triangle where the longest side was not opposite the largest angle.

6. Another way to state the relationship in Question 5:

If two sides in a triangle are not congruent, then the angles opposite those sides are also not congruent.

Use this statement to explain why a scalene triangle can never have two congruent angles.