Class Activity 0A: Using Triangle Congruence Criteria

1. Take two straws and use a rubber band to bind them together at their midpoints. Notice that you can rotate the straws, keeping the midpoints fixed. Visually, you can see that the ends of the two straws on one side of the rubber band are as far apart from each other as the ends of the two straws on the other side of the rubber band. Use a triangle congruence criterion and facts we studied previously about angles to explain why this is so.

2. Here is an old fashioned way to make a rectangular foundation for a house. Take a pair of identical pieces of wood for the length of the house and another pair of identical pieces of wood for the width of the house. Place the wood on the ground to show approximately where the foundation will go. The pieces of wood now form a quadrilateral whose opposite sides are the same length. Measure the two diagonals of the quadrilateral and keep adjusting the quadrilateral until the two diagonals are the same length. Explain why the quadrilateral must now be a rectangle. (Remember that we defined rectangles to be quadrilaterals that have 4 right angles, so you must show that this quadrilateral has 4 right angles).