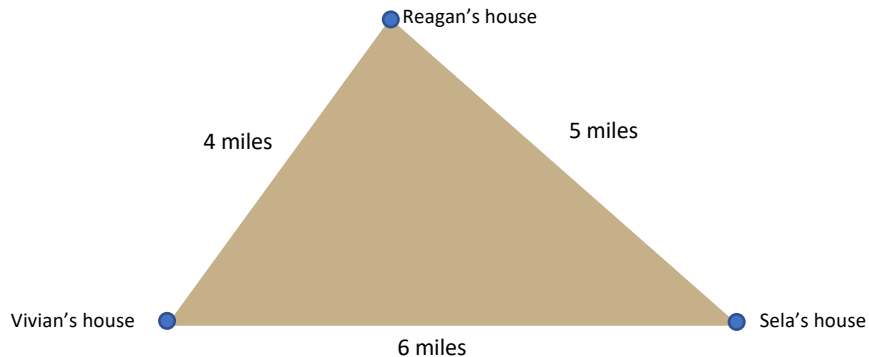**Chapter 5 Mini-Project**   Name_____
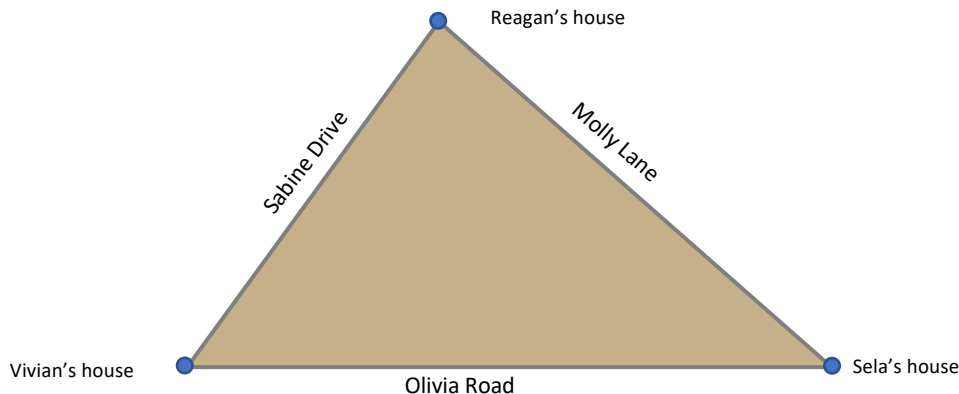
For this activity, use your own notebook paper or Geogebra to construct a triangle for each question. For paper, you will need to include a scale (example: 1 inch = 1 mile) for each of your sketches. On the chapter 6 assessment, you will be asked to explain your methods and why you chose them for finding the answers. For paper, you may have to repeat measurements to get it right. Remember, measure twice, cut once.

Reagan, Vivian, and Sela all decide to build their own house out in the newly founded Aidansburgh out in unsettled land. The map of their houses locations relative to each other is shown below.

1) Aidan David, self-appointed mayor, wants to make sure that the general store is located at a central point equidistant from each home. Plot this location using your construction tools.

2) As the town grows, it becomes clear that they won't be able to continue to draw water from their own wells anymore so Aidan will have to come up with a water system to deliver water to the new residents of the town. The updated map (shown below) connects each house by Sabine Drive, Molly Lane, and Olivia Road. The water system will need to be located such that it can run a line to each connecting street and then distribute the water down each street from there. To minimize the necessary piping, the reservoir must be located at a place that is closest to all three main roads. Plot this location using your construction tools.

3) Among the new attractive features to spring up in Aidansburgh is Daniel's new house which he is designing with Maya and Riley. He wants his art studio to be shaped like a triangular prism (see below). The dimensions of the triangle base are 20 ft by 21 feet by 22 feet. Local civil engineers Finnan and Tate decide that one of the support columns should go through the triangular ceiling's *center of mass*. Find this location on the ceiling of the studio.