Student Instructions: The Logo Problem
You are a graphic designer who enjoys logos. You have been hired by a school district to help them understand an old logo design and help them create a new logo for the future. Creating a new logo seems more fun, so you start with that project first. Part 1 below is what the school district has asked you to do to create a new logo. Part 2 is what the school district has asked you to do to help explain the old logo.

Part 1: The New Logo. The school district wants you to create a new design. They would like you to begin by drawing two different polygons in quadrant one of the coordinate plane provided. The school district would like the logo to symbolize how it has transformed itself into a leader in the field of education, by using a composition of rigid transformations. Using your two polygons which is your preimage, now create a composition that must include one reflection, one translation, and one rotation (less than 360 degrees). Label each transformation. The school district is going to hold a public session to reveal your new logo. As part of a presentation to the public, the district is asking you to explain the transformations you used to develop the new logo. On a separate sheet of paper, provide a written statement which explains the composition of the transformations.
Part 2: The Old Logo. Below is the old logo from the school district. It was created with three different sized squares to represent the three schools that make up the district. The two smaller squares were drawn adjacent and the largest square was drawn to overlap the other two. The three overlapping squares created four triangles in the old logo; ΔABF, ΔEFD, ΔIHB, and ΔGHF. For years, members of the school district debated which two triangles were congruent in the old logo. They have asked you, the graphic design expert, to identify which two triangles are congruent. (A) On a separate sheet of paper, prove that these triangles are congruent, using detailed statements and reasons. (B) Describe the rigid transformations you would use to map one triangle onto the other.