For this activity, use only rectangles with sides that are parallel to the axes.

1. On coordinate axes, make 4 rectangles of different sizes and locations. Label the vertices of the rectangles with their coordinate pairs.

2. What patterns do you see among the coordinates of the vertices?
3. Make conjectures about the relationships between the coordinates of the vertices of any rectangle whose sides are parallel to the \( x \)- and \( y \)-axes.

4. Justify one conjecture based on what you know about coordinate geometry. Remember, your conjecture may turn out to be true or false.

5. Write down your conclusion.