Name _____

Class _____

Problem 1 – Systems of equations

On page 1.2, use the **Hide/Show** tool or the **Intersection Point(s)** tool to reveal the coordinates of the intersection points.

- How many systems of linear equations are there whose solutions describe the vertices of the triangle?

- How many solutions does each system have?

- Which intersection point belongs to which system?

- Can the point (2, 5) be a solution to the system $\begin{cases} y = -2x \\ y = x+3 \end{cases}$? Explain your reasoning.

- Is the point (0, 4) a solution to any of the systems? Explain your reasoning.

Problem 2 – System of inequalities

On page 2.1, change the = symbol to ≤ or ≥ for each equation until the darkest shaded region forms a triangle.

Use the *Calculator* application on the page 2.3 to test the vertices for each inequality.

- How many of the vertices of the triangle are solutions to the system given on page 2.2?

- Test points inside the triangle on page 2.5.How many solutions are there to the system?

- If the inequalities of the system were changed to < and >, how many of the vertices would be solutions?

- What differences in the solutions did you find between systems of linear equations representing a triangle and a system of linear inequalities representing a triangle?