1. Is (10, -5) a solution to 3x + 4y < 10? Justify your response.

2. Is (8, 0) part of the solution set of the inequality shown here? Explain your reasoning.



- 3. Consider the graph pictured to the right.
 - a. State one point that is part of the solution set.
 - b. State one point that is not part of the solution set.
 - c. Is the point (4, 3) part of the solution set? Explain.





4. Graph the inequality $2x - 4y \ge 4$.

- 5. Graph each system of inequalities.
 - a. y x > -3 $y \le 3x + 1$



b. 3y - x < 12 $x \le 4$

6. Write an inequality that represents the graph shown here.



7. Write a system of inequalities that represents the graph shown here.



- 8. Given the system: $y \ge -3x + 1$ y < x - 2
- a. Use your graphing calculator to determine which quadrant(s) of the coordinate plane the solution is located. State the quadrant(s).

Helpful Hint: The quadrants of a coordinate plane are pictured here.



b. Is the point (8, 6) part of the solution to the system? Justify your response.

- 9. Carly got a job at an ice cream shop for the summer. Her first task is to order boxes of small ice-cream cups and boxes of large ice-cream cups. Each box of small cups costs \$100 and each box of large cups costs \$150. A maximum of \$1200 has been budgeted for cups and the storage room can only hold up to 10 boxes.
 - a. Write a system of linear inequalities that can be used to represent the situation.
 Use *x* to represent the number of boxes of small cups and *y* to represent the number of boxes of large cups.

b. Graph the system. *Remember to label* all parts of your graph.



c. State one solution to the system. Explain its meaning in the context of the situation.