1st Hour Topics 2 Name: _____

Systems Test

1) Spring break is almost here and I think I need a vacation! While I'm there, I plan on renting a car. Hertz charges a $100 insurance deposit plus $35 per day. Enterprise charges a $60 insurance deposit and $50 per day.

a) Write the system of linear functions that would model this situation

b) Solve the above system

c) What does the solution mean with regards to which company I should go with?

2) The physics department at MHS is planning a field trip to Six Flags Magic Mountain. There are some students going, and some adult chaperones. The park charges a special rate for these occasions: $32 for a student and $40 for an adult chaperone. A total of 65 people are going on this trip and it's going to cost them $2200.

Set up AND SOLVE a system of equations that finds how many students there are and how many adult chaperones there are.

3) Explain when a system of linear functions will have NO solution. Explain what it means both graphically and how the function definitions will be related

4) Explain when a system of linear functions will have INFINITE solutions. Explain what it means both graphically and how the function definitions will be related.

1st Hour Topics 2 Name: _____

6) Which of the following points would be a solution to the following system of inequalities? (Circle all that apply)

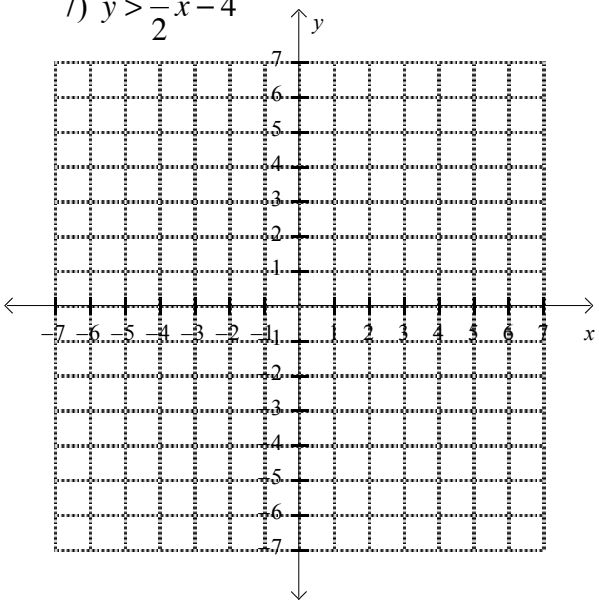
$$\begin{aligned} y &> -x + 2 \\ y &\le 2x - 1 \end{aligned}$$

a) (0, 0) b) (2, 4)

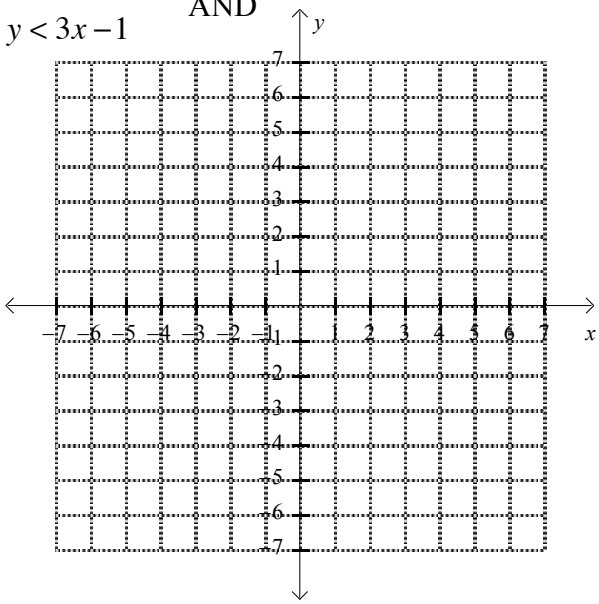
c) (3, -4) d) (5, 0)

Find all of the points that satisfy the following inequalities:

7) $y > \frac{1}{2}x - 4$



8) $\begin{aligned} -2y &\le 4x - 6 \\ y &< 3x - 1 \end{aligned}$ AND



9) The graph of a linear function, we'll call it "F", passes through the points (3,7) and (5,1).

a) What is the rate of change of a function whose graph is perpendicular to the graph of F?

b) What is the rate of change of a function whose graph is parallel to the graph of F?

Solve the following systems linear functions:

11) $\begin{aligned} y &= -2x + 11 \\ y &= x - 7 \end{aligned}$

12) $\begin{aligned} 3x - 2y &= 10 \\ 5x + 5y &= 0 \end{aligned}$