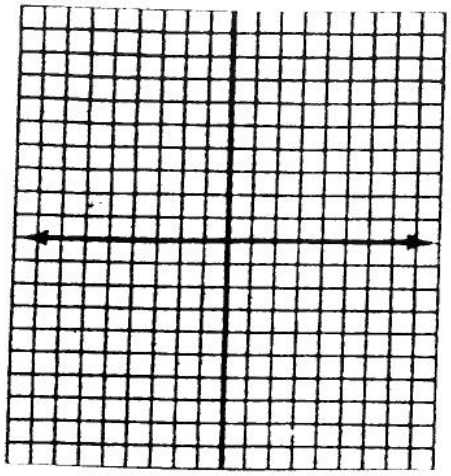
Algebra I
7.8-7.9 Quiz Review
Systems of Linear Inequalities

NAME:_____
DATE:_____ HOUR:____

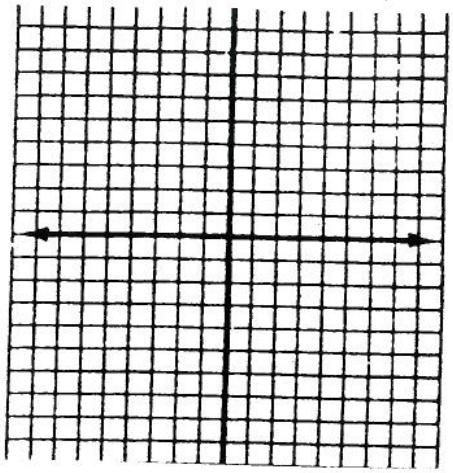
Part I. Graphing Inequalities

A. Graph each inequality.

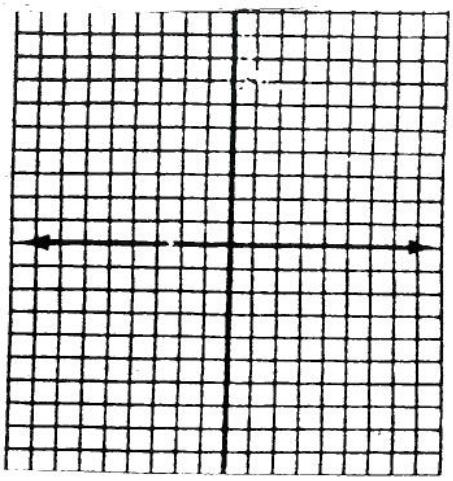
1. $y \geq \frac{1}{3}x + 2$



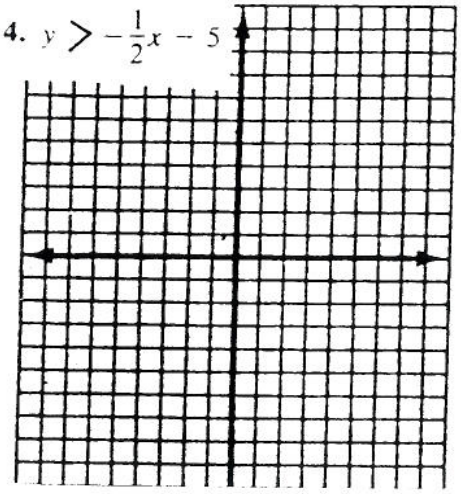
2. $y < \frac{2}{5}x + 4$



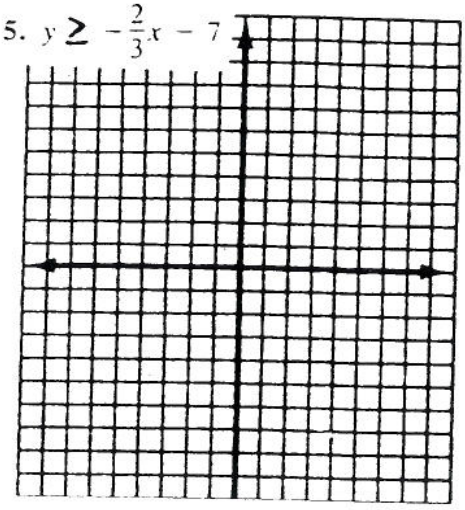
3. $y \leq -\frac{4}{5}x$



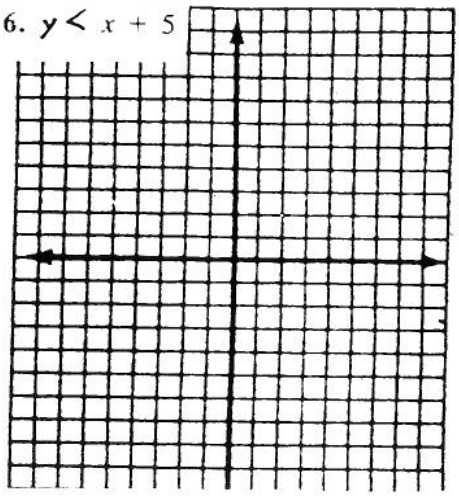
4. $y > -\frac{1}{2}x - 5$



5. $y \geq -\frac{2}{3}x - 7$

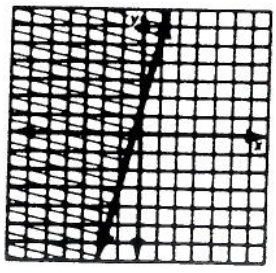


6. $y < x + 5$



B. Match the graph with its inequality. $y < \frac{2}{3}x - 2$ $y \geq 4x + 1$ $y \leq \frac{-2}{3}x - 2$

1.



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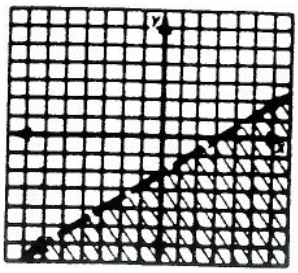
2.



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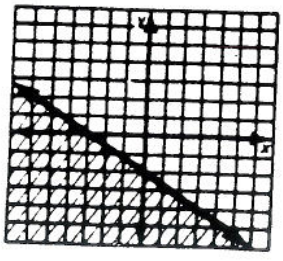
3.



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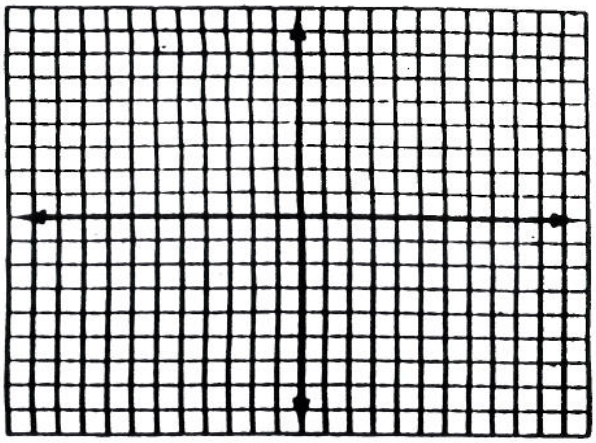
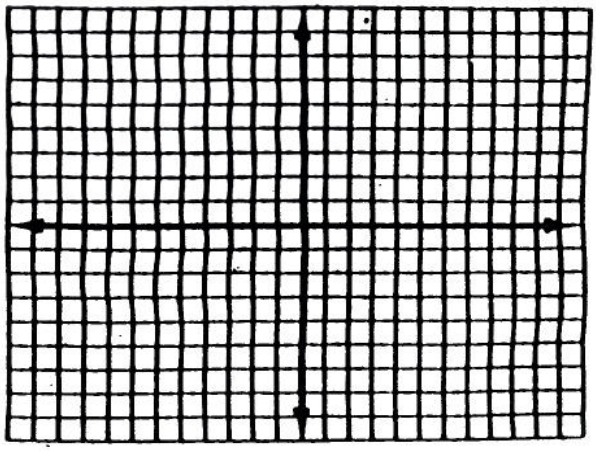
Part II. Systems of Inequalities

A. Graph the solution to each system.

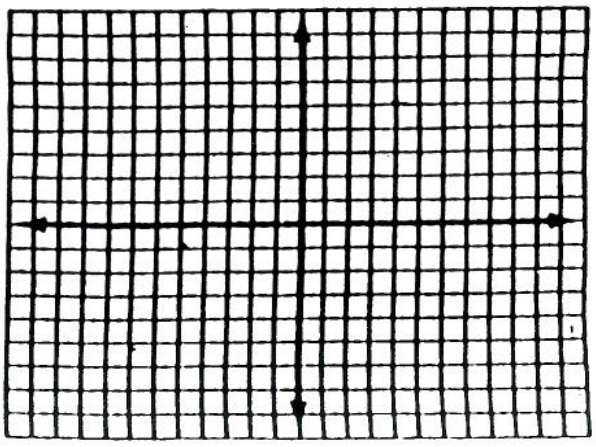
1. $\begin{cases} y \leq -x + 4 \\ y > -3x + 2 \end{cases}$



2. $\begin{cases} y \geq x - 5 \\ y > -x + 3 \end{cases}$



3. $\begin{cases} y \leq x - 4 \\ y < -2x + 3 \end{cases}$



B. Determine if the point is in the SOLUTION to the system. Answer YES or NO. Show work.

1. $\begin{cases} y \leq 2x - 4 \\ y > \frac{1}{2}x - 5 \end{cases}$

(6, 0)

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2. $\begin{cases} y < x + 1 \\ y > -x + 5 \end{cases}$

(4, 1)

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3. $\begin{cases} y < -3x + 4 \\ y > -x + 1 \end{cases}$

(0, 0)

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Part III. Write a system of inequalities for each scenario.

1. You are decorating your backyard for a graduation party. You need to buy red (x) and black (y) mylar balloons. Red mylar balloons are $1.50 each and black mylar balloons are $1.25 each. You have a budget of $30. You will need at least 20 balloons.

2. Your friend, Mia, is helping you with the party. You tell her she needs to buy red (x) and black (y) cups. Red cups are $0.05 each and black cups are $0.07 each. She has a budget of $5 for cups. You will need at least 50 cups.

3. Your friend, Frank, is also helping you with the party. You tell him he needs to buy red (x) and black (y) napkins. Red napkins are $1.79 a pack and black napkins are $1.69 a pack. You will need at least 8 packs of napkins. He has a budget of $15 for napkins.

4. Your friend, Barney, also volunteers to help you (you have to invite him, he's family). He wants to buy purple (x) and green (y) mylar balloons. Purple mylar balloons are $1.70 each and green mylar balloons are $1.50 each. You give him a budget of $6. You do not want more than 4 Barney balloons at your party.

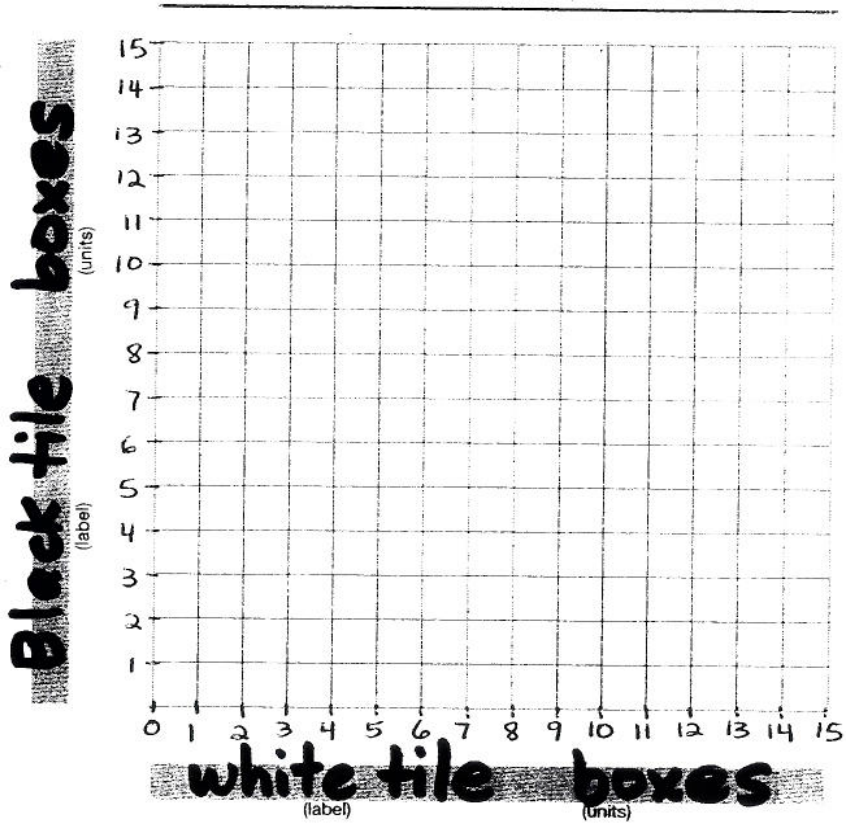
5. Your friend, Sherri, says you need crepe paper for your backyard party. You will need to buy red (x) and black (y) crepe paper. Red crepe paper rolls are $1.15 each and black crepe paper rolls are $1.25 each. You will need at least 4 rolls of crepe paper. You give yourself a budget of $8 for crepe paper.

Read the scenario below. Use the scenario to answer Questions 6 through 8.

Your uncle is retiling the kitchen in his house. He plans to use white and black vinyl tile. The white tile costs $40 per box, and the black tile costs $32 per box. He will need at least 13 boxes of tile and his budget is $480.

6. Write a system of linear inequalities that represent the problem situation where x is the number of boxes of white tiles and y is the number of boxes of black tiles.

7. Graph the inequalities you wrote in Question 6. Be sure to label your graph clearly.



8. Identify two different solutions of the system of inequalities. What do these solutions represent in the problem situation? Use complete sentences in your answer.