

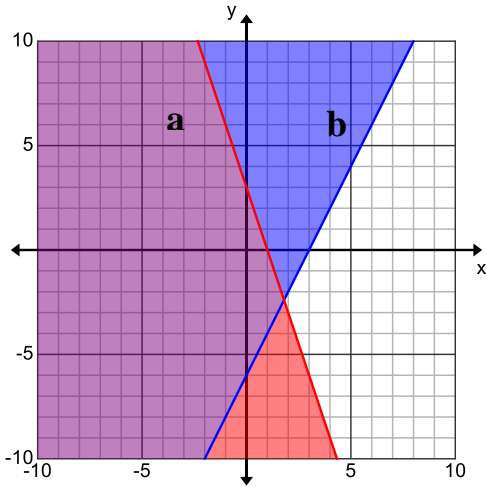
4A Introduction to Systems

Name: _____ Per: _____

SHOW YOUR WORK FOR FULL CREDIT. NO WORK IN PEN.

OBJECTIVES: Graph systems of inequalities. Determine the number of solutions of a system of equation has.

1. Use the following system of inequality (**two inequalities** on the same graph)

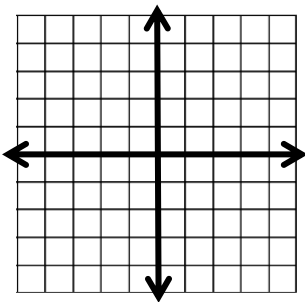


<p>a. Graph the inequality labeled a</p> <p>b. Write the inequality: _____</p> <div style="text-align: center; margin-top: 20px;"> </div>	<p>c. Graph the inequality labeled b</p> <p>d. Write the inequality: _____</p> <div style="text-align: center; margin-top: 20px;"> </div>
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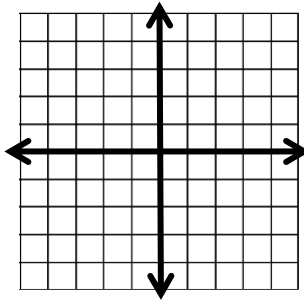
- e. Is the point $(1, -6)$ a solution to inequality a? _____ Explain: _____
- f. Is the point $(1, -6)$ a solution to inequality b? _____ Explain: _____
- g. Is the point $(1, -6)$ a solution to the original graph? _____ Explain: _____

Graph each inequality.

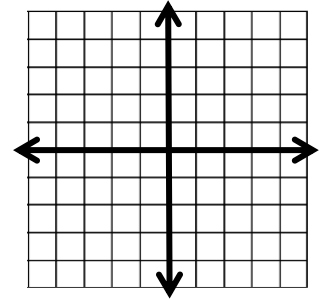
2. $3x - 3y > 6$



3. $2x + 4y < 2$

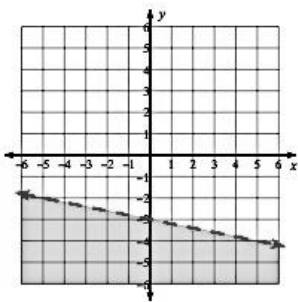


4. $y \geq -\frac{1}{5}x + 3$



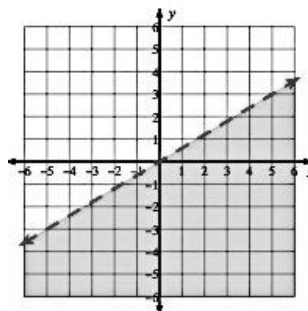
Write the inequality for the following graphs. Then graph the inequality below the graph on the same grid.

5. _____



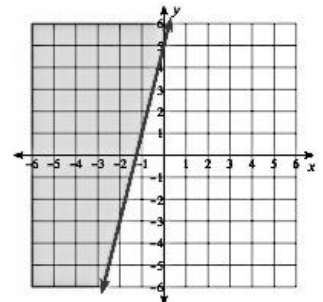
a. Graph $y > x - 1$

6. _____



a. Graph $-2y + 6 < x$

7. _____



a. Graph $2x - 4y \geq 8$

8. Highlight the solution set to each system of inequality from #5, #6 and #7.

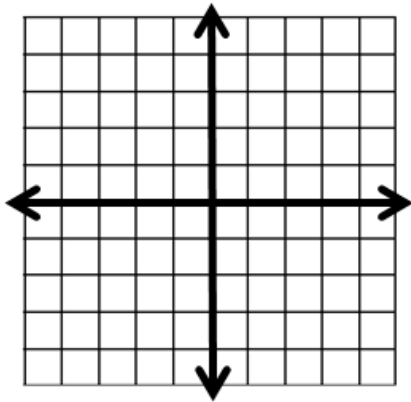
9. A _____ of inequalities is one or more inequality. When we graph the inequalities, the _____ set is the section that is _____ shaded.
10. A system of equations is _____ or more equations. Graphing will estimate how many _____ the system has.
11. If the lines intersect, there is _____ solution. There is only _____ point where they intersect.
12. If the lines are _____, there are no solutions and their slopes will be the _____ and the _____ will be different.
13. If the equations are for the same line, there are an _____ number of solutions. The _____ and y-intercepts are the same. These equations may not look the _____, but can be simplified to be the same.

For the following: 1) List the **SLOPES**. 2) **GRAPH** the lines. 3) If they cross, **CIRCLE** where they intersect.

14. Line A: $y = -\frac{3}{2}x + 4$

Line B: $y = \frac{2}{3}x + 1$

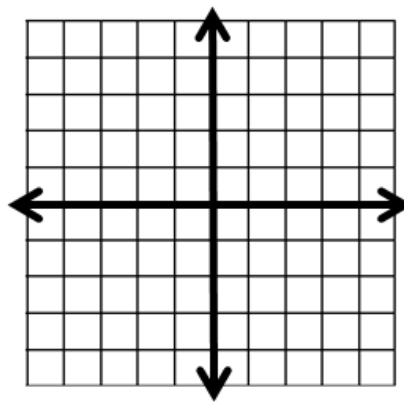
Slope A: _____ & B: _____



15. Line C: $y = 2x + 3$

Line D: $y = 2x - 5$

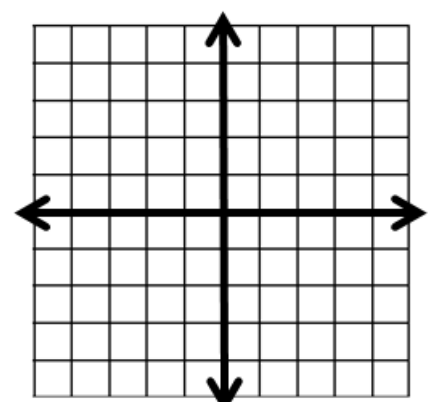
Slope C: _____ & D: _____



16. Line E: $y = \frac{1}{3}x - 4$

Line F: $y = -4x + 5$

Slope E: _____ & F: _____



By looking and comparing the slopes, **CIRCLE** whether the following equations are **parallel**, the **same line**, or have only **one intersecting point**. **EXPLAIN** how do you know (HDYK)

17. $y - \frac{1}{2}x = 4$

$y = \frac{1}{2}x + 2$

parallel, the same, intersecting

HDYK _____

18. $y = 2x$

$y = -3(x - 1)$

parallel, the same, intersecting

HDYK _____

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

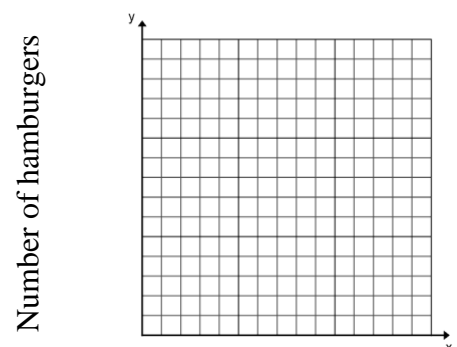
$y = 3x - 4$

parallel, the same, intersecting

HDYK _____

20. The Drama club is selling nachos and hamburgers to raise money to go to St. George. They will sell nachos for \$2 and hamburgers for \$5. They want to collect at least \$500 in sales.

- Define your variables
- Write an inequality to represent
- Find the intercepts: (, 0) and (0,)
- Label and scale the grid.
- Graph the inequality.



Number of nachos