

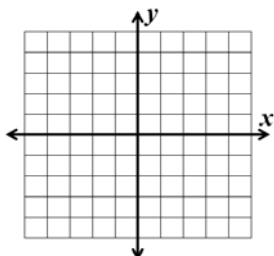
3.2 Systems of Inequalities

Name: _____

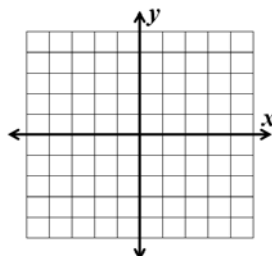
Write your questions
and thoughts here!**Notes****Recall:**

Let's remember how to graph a line from slope-intercept form:

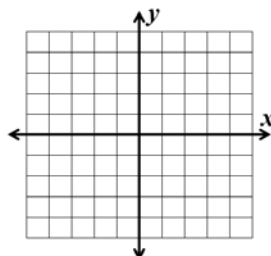
1. $y = 3x - 4$



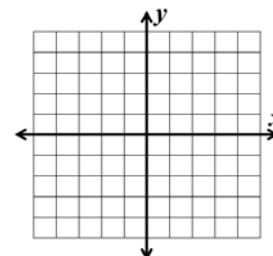
2. $y = -2x + 1$



3. $y = 2$

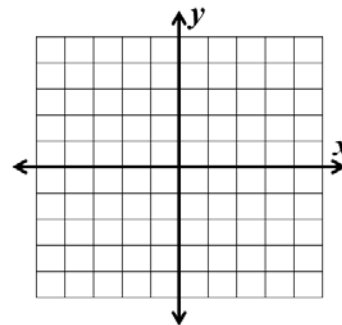


4. $x = -3$

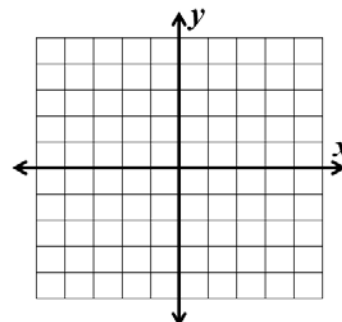
5. Circle all the ordered pairs (x, y) that are solutions to the inequality $y < 2x - 3$. $(0, 0)$ $(2, 0)$ $(3, 2)$ $(-1, -1)$ $(0, -3)$

6. Graph the inequality from #5 with two different methods.

Use a Test Point	Shade Above or Below

7. Graph a STANDARD FORM inequality: $-x - y \leq -3$ 

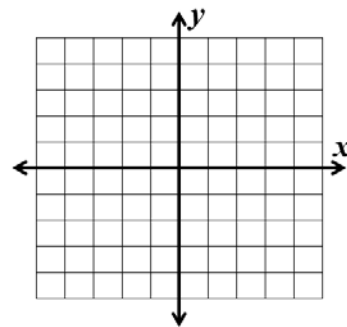
Two or more inequalities is called a _____. All the points that work for both inequalities are considered the solution set. Let's take a look at the visual representation (that's fancy words for "the graph").

8. Graph the following system: $\begin{cases} y < 2x - 3 \\ -x - y \leq -3 \end{cases}$ 

Write your questions
and thoughts here!



9. Graph the following system: $\begin{cases} 2x - y \geq 2 \\ x - 2y \geq -2 \end{cases}$



Now
summarize
what you
learned!



3.2 Systems of Inequalities

Algebra 1

Name: _____

Practice

Circle all the ordered pairs (x, y) that are solutions to the given inequality.

1. $4x + 5y < 0$

$(0, 0)$ $(1, -1)$ $(2, 0)$ $(0, -2)$ $(-2, 0)$

2. $4x - y \geq 4$

$(0, 0)$ $(6, 1)$ $(1, 0)$ $(-4, -4)$ $(0, -5)$

3. $3x + 4y \geq 8$

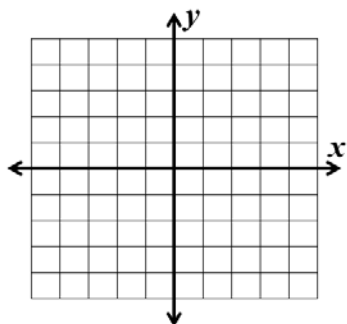
$(0, 0)$ $(0, 2)$ $(3, 0)$ $(2, 2)$ $(-2, -2)$

4. $x - y < 4$

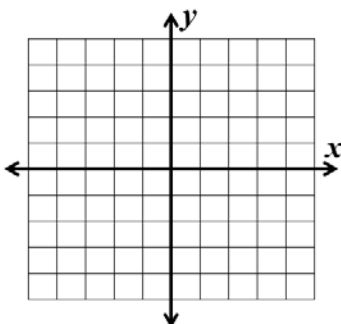
$(0, 0)$ $(2, -10)$ $(3, -1)$ $(4, 0)$ $(-5, 1)$

Graph the following inequalities.

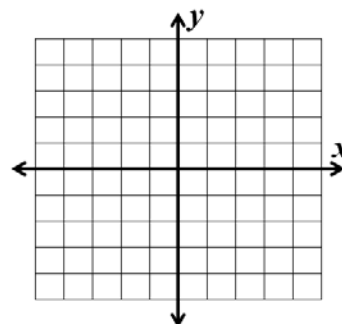
5. $y > \frac{1}{3}x$



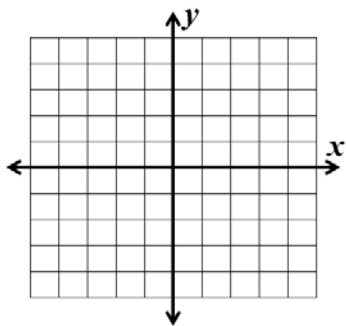
6. $y \leq -2$



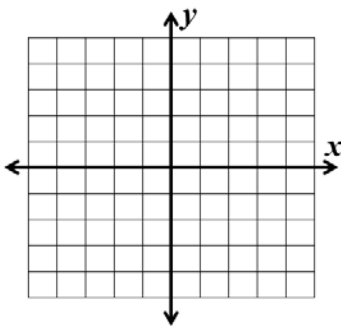
7. $4x + 5y < 15$



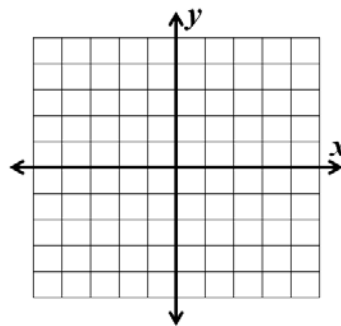
8. $x > 1$



9. $y < -2x - 1$

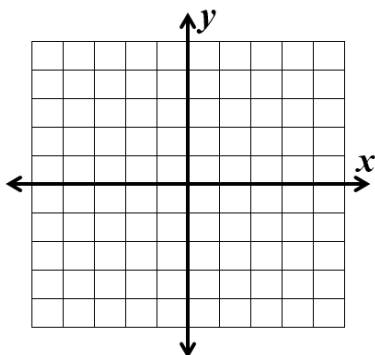


10. $8x - 3y \geq -12$

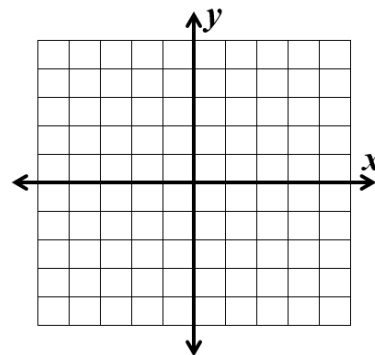


Graph the following systems of inequalities.

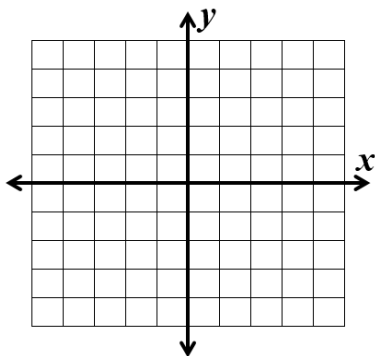
11.
$$\begin{cases} y < -\frac{1}{2}x - 2 \\ y \geq -2x + 1 \end{cases}$$



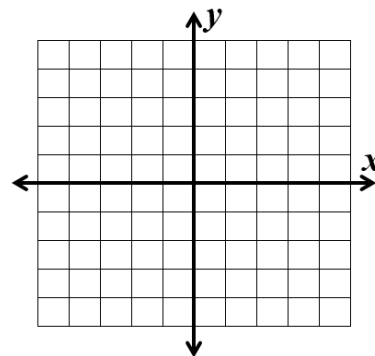
12.
$$\begin{cases} y \leq -x + 1 \\ y > -1 \end{cases}$$



13.
$$\begin{cases} 6x - y > -3 \\ x - y < 2 \end{cases}$$



14.
$$\begin{cases} x + 2y > -4 \\ 2x - y \geq -3 \end{cases}$$



15. Solve the equation. Make sure you state any excluded value(s). $\frac{5}{n+2} = \frac{4}{10}$

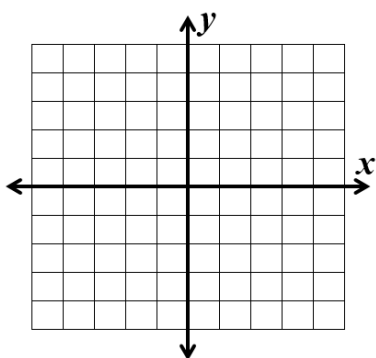
16. Solve the inequality and express the solution graphically. $-2(-6 + x) < 32$



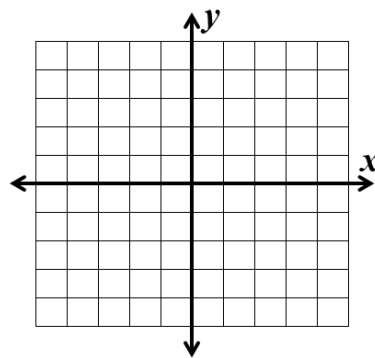
3.2 Systems of Inequalities

Practice check: The next two questions are just like the practice, but we provide no answers. If you can't do these problems, then you're definitely not ready for a Mastery Check!

17. $x + 4y > 8$



18.
$$\begin{cases} 2x - y > 3 \\ 4x + y \geq 3 \end{cases}$$

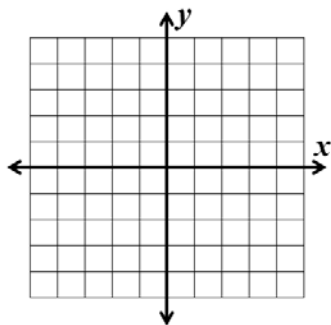


Plot the solutions sets of the following inequalities.

19. $y \geq x^2$

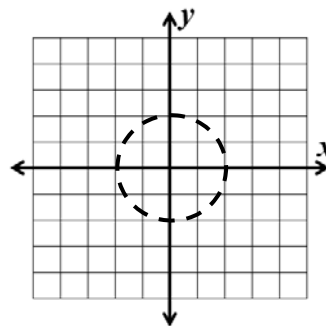
Use the t-chart below to find coordinate points of the graph. Connect the dots to form the graph and shade the correct side of your curve.

x	y
-2	
-1	
0	
1	
2	



20. $x^2 + y^2 > 4$

The graph of this strange inequality is a circle with a radius of 2. The center is at the origin. The graph is given below, but you need to figure out where to shade.



22. You want to make some desserts for your 8 friends, but you only have 1 hour to do it. It will take you 5 minutes to make a waffle and 10 minutes to make a chocolate cake. Which of the following linear inequalities correctly models this situation?

A. $x + y \leq 8$, $5x + 10y \geq 60$

B. $x + y \geq 8$, $5x + 10y \geq 60$

C. $x + y \geq 8$, $5x + 10y \leq 60$

D. $x - y \leq 8$, $5x - 10y \geq 60$

E. $x - y \geq 8$, $5x - 10y \leq 60$

Exit Ticket:

What pairs of numbers satisfy the statement: The sum of two numbers is less than 10? Create an inequality with two variables to represent this situation and graph the solution set.

