

NOTES: LINEAR INEQUALITIES

SOLUTIONS TO LINEAR INEQUALITIES

A linear inequality is like a linear _____ but it has an _____ symbol instead of an equal sign.

_____ to linear inequalities are any ordered pair that make the inequality true.

Tell whether each ordered pair is a solution of the linear inequality.

1. (3, 9); $y \geq 5x - 6$

2. (-4, 2); $4x - 5y > 6$

GRAPHING LINEAR INEQUALITIES

When graphing a _____ inequality on a coordinate plane (2 variables means we need 2 number lines, the x and y axes), we will use the graph of the related equation as a boundary line and shade above or below the line to show all possible solutions for the variables.

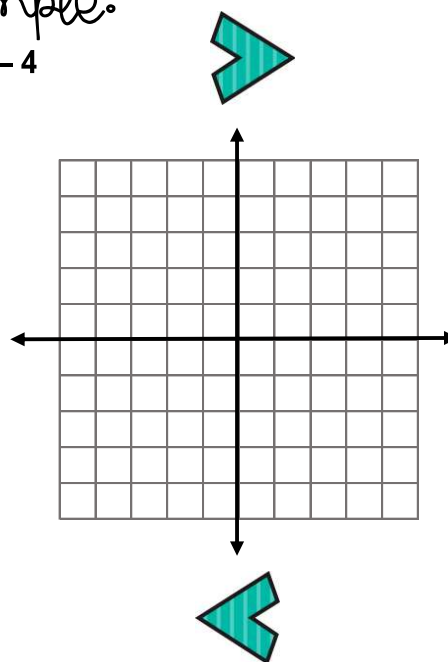
Steps to Graph:

Convert the inequality to slope-intercept form (solve for y) and graph the line on the coordinate plane.

Boundary Line and Shading:

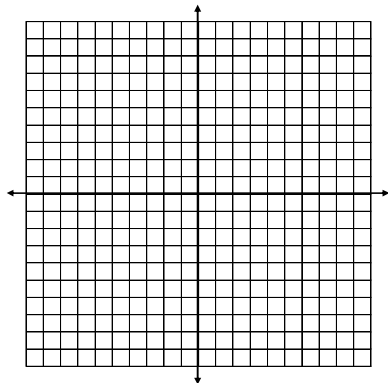
Line	Solid line for \geq and \leq
	Dotted line for $>$ and $<$
Shading	Shade above for $>$ and \geq
	Shade below for $<$ and \leq

Example:
 $y > 2x - 4$



Graph the linear inequality on the coordinate plane provided. Then determine if the ordered pair given is a solution to the linear inequality. Circle yes or no.

3. $y > 3x - 2$

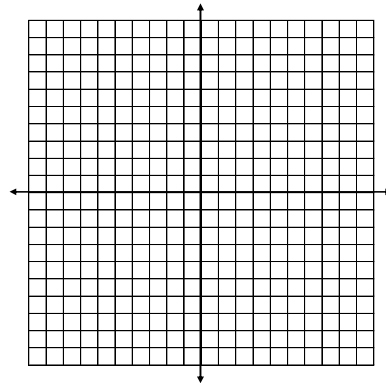


Solution?

(5, -2)

yes no

4. $y \leq -\frac{1}{2}x + 1$

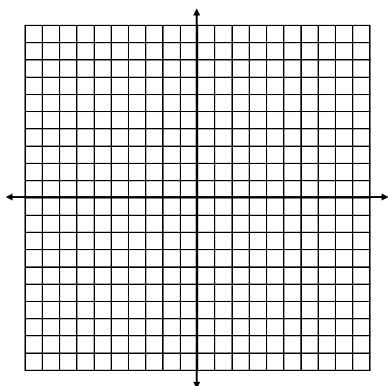


Solution?

(2, 0)

yes no

5. $2x + 6y \geq 12$

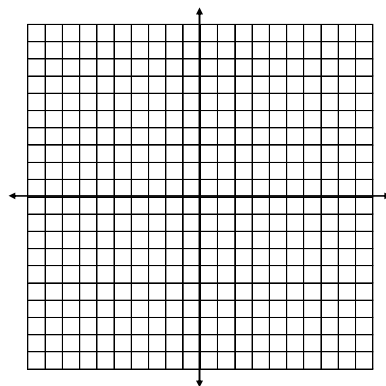


Solution?

(-8, 9)

yes no

6. $4x - y > 5$

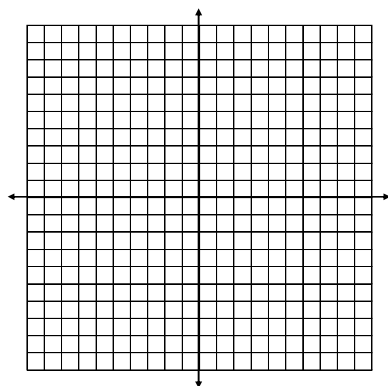


Solution?

(-1, 4)

yes no

7. $y > -3$

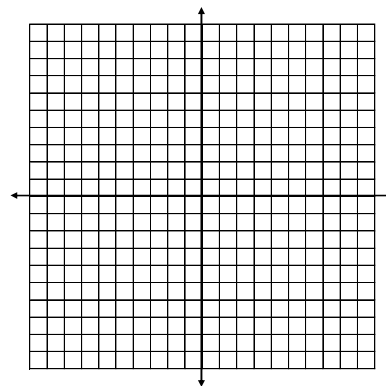


Solution?

(7, -3)

yes no

8. $x - 1 \leq 2$



Solution?

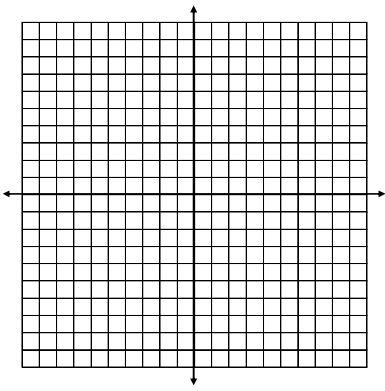
(0, 6)

yes no

A. LINEAR INEQUALITIES

Graph the linear inequality on the coordinate plane provided. Then determine if the ordered pair given is a solution to the linear inequality. Circle yes or no.

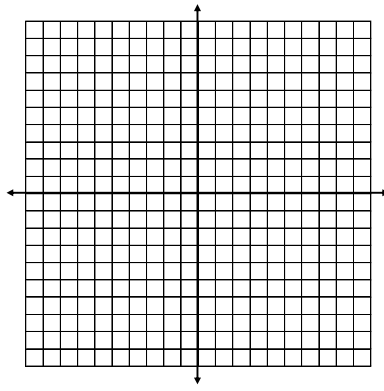
1. $y > \frac{1}{2}x - 3$



Solution?
(4, -1)

yes no

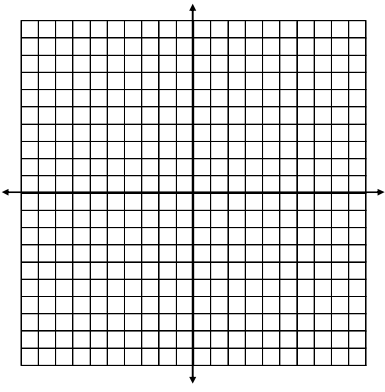
2. $y < 3x - 4$



Solution?
(6, 2)

yes no

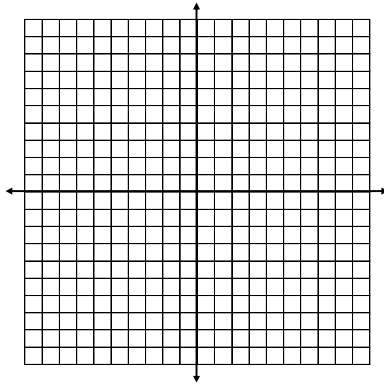
3. $y \leq -\frac{1}{4}x + 2$



Solution?
(-8, -1)

yes no

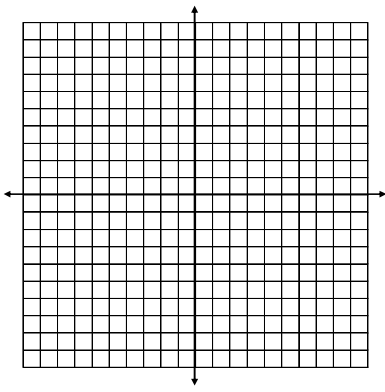
4. $y \geq 5x$



Solution?
(3, 1)

yes no

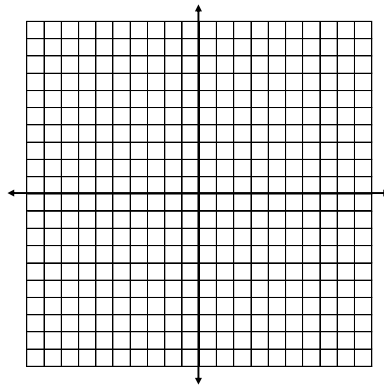
5. $8x + 2y > 10$



Solution?
(6, -4)

yes no

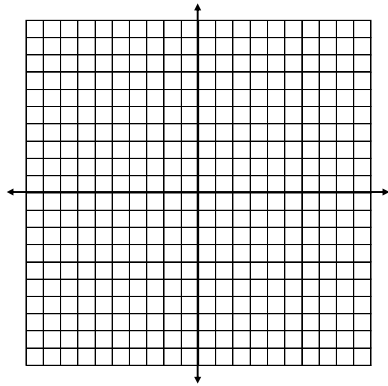
6. $x - 3y > 9$



Solution?
(12, 1)

yes no

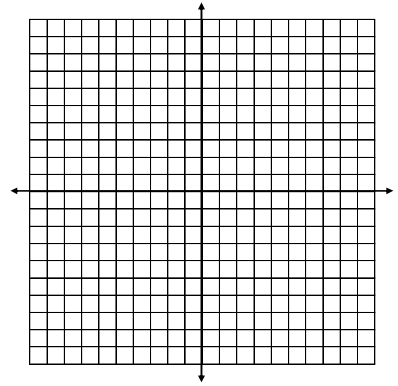
7. $y + 2 \geq 6x$



Solution?
(7, -3)

yes no

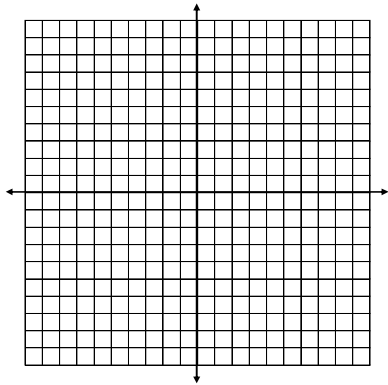
8. $2x - 3y > 12$



Solution?
(-1, 5)

yes no

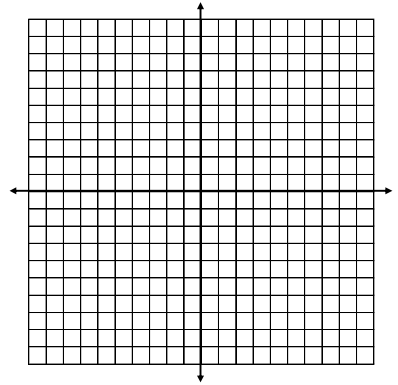
9. $x > -4$



Solution?
(-5, 0)

yes no

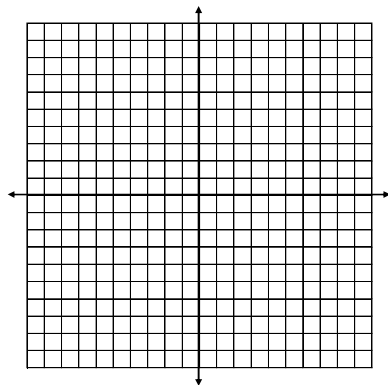
10. $5y < 5x + 20$



Solution?
(-4, -1)

yes no

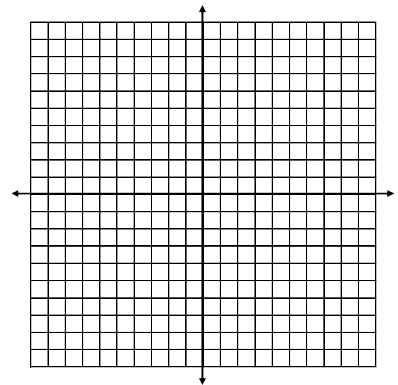
11. $y - 2 > 3(x + 1)$



Solution?
(0, 5)

yes no

12. $y \leq 2$



Solution?
(8, 1)

yes no