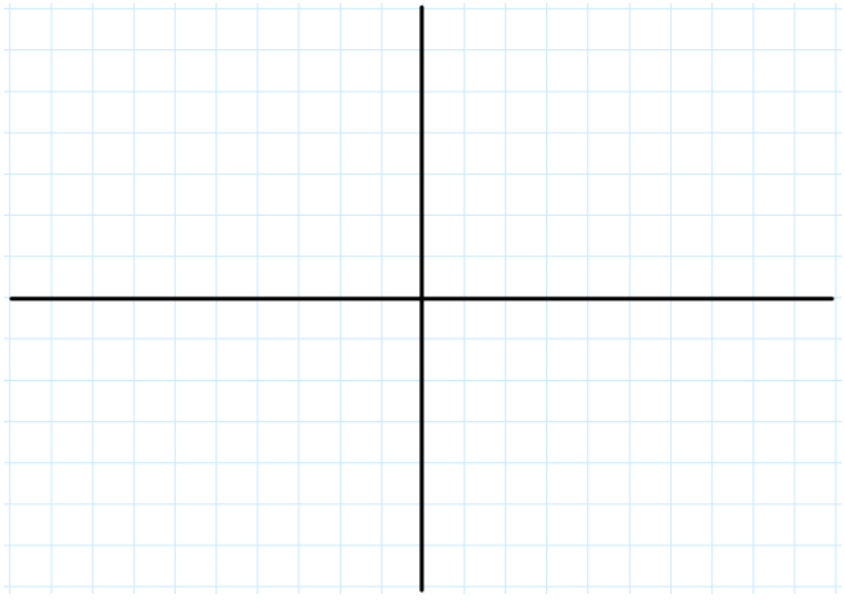
Monday, September 23, 2019 7:46 AM

Warm Up

Graph the following linear Inequalities.

$y \geq 3x + 2$

$y < \frac{1}{3}x - 3$



Essential Question

How is the graph of a system of linear inequalities related to the solutions of the system of linear inequalities?

Needed Vocab:

- **Solution of a system of Linear Inequalities**
- **System of Linear Inequalities**

Goal: "I can. . .

Graph and solve a system of linear inequalities."

If we are solving a system of linear equations the solution is the point at which the lines cross. If are solving the system of linear inequalities the solutions are the points that satisfy both inequalities.

Graph the following inequalities

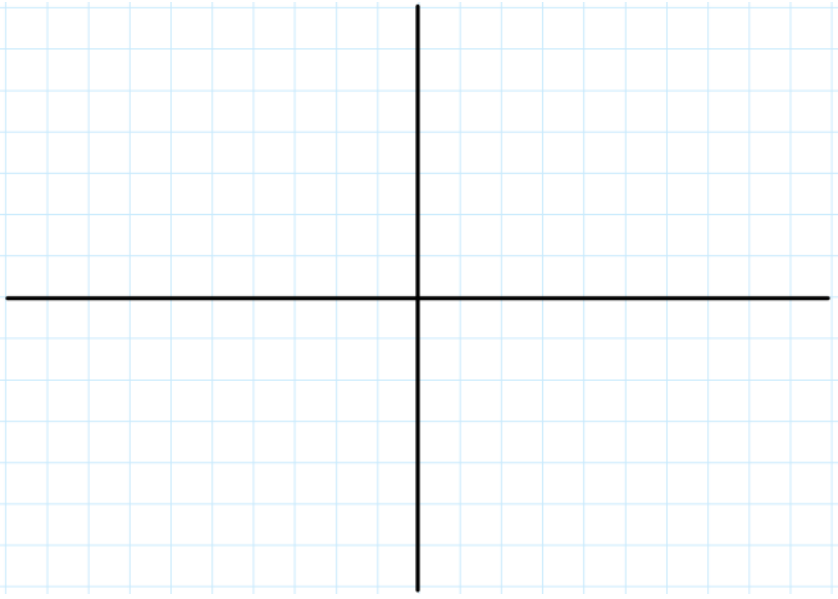
the solutions are the points that satisfy both inequalities.

Graph the following inequalities

$y \leq -x + 3$

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

The area of the shaded region that includes answers to both sets is the answer to the system of linear inequalities.

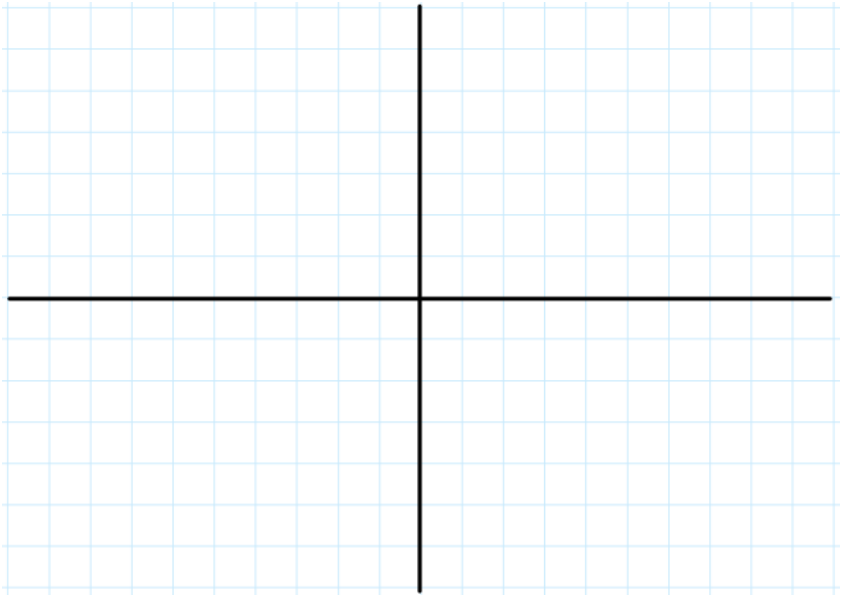


Example 1

What are the solutions to the system of linear inequalities?

A. $y > x - 2$

$y \leq -x + 1$

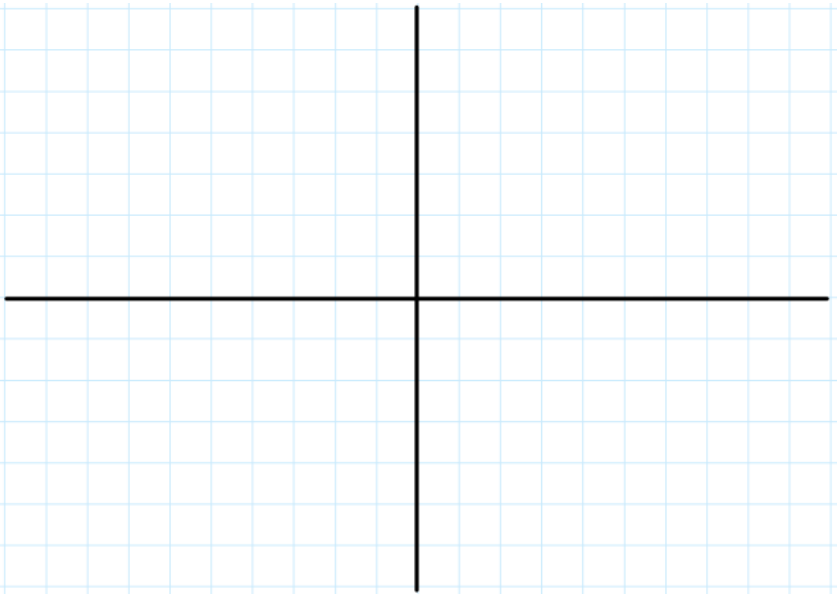


What are the solutions to the system of linear inequalities?

B. $y \geq -x + 2$

$y < -x - 2$

$y < -x - 2$



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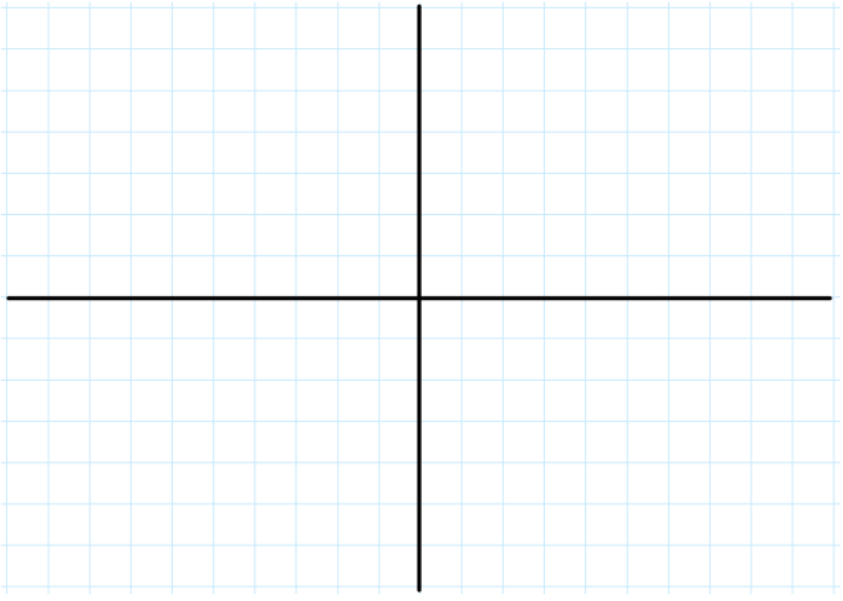
1. Graph the system of inequalities.

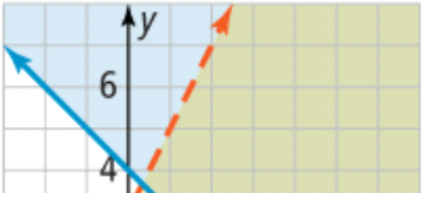
a. $y < 2x$

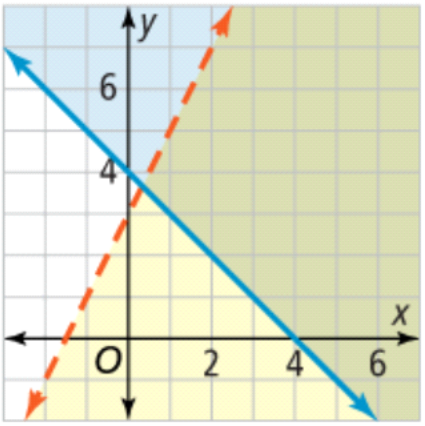
$y > -3$



Example 2

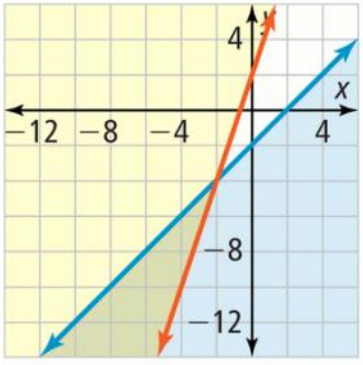
What system of inequalities is shown by the graph?



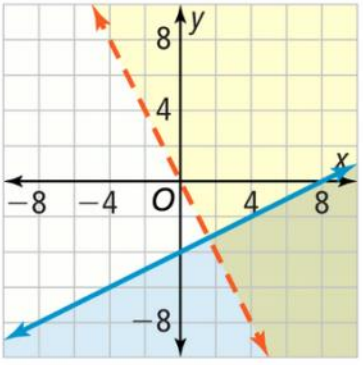


2. What system of inequalities is shown by each graph?

a.



b.



Systems of Linear Inequalities

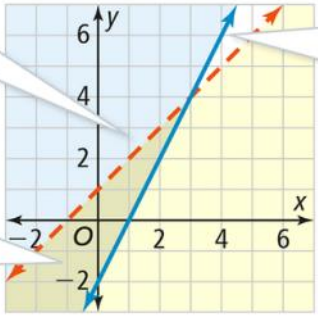
ALGEBRA $y < x + 1$ ..... All points below the dashed line

$y \geq 2x - 2$ ..... All points above the solid line

GRAPH

The line is dashed so the points on the line are not included in the solution.

The line is solid so the points on the line may be included in the solution.



The solution of the system of linear inequalities is the shaded region.

Homework

Pg. 175
17-31 odd, 36, 37