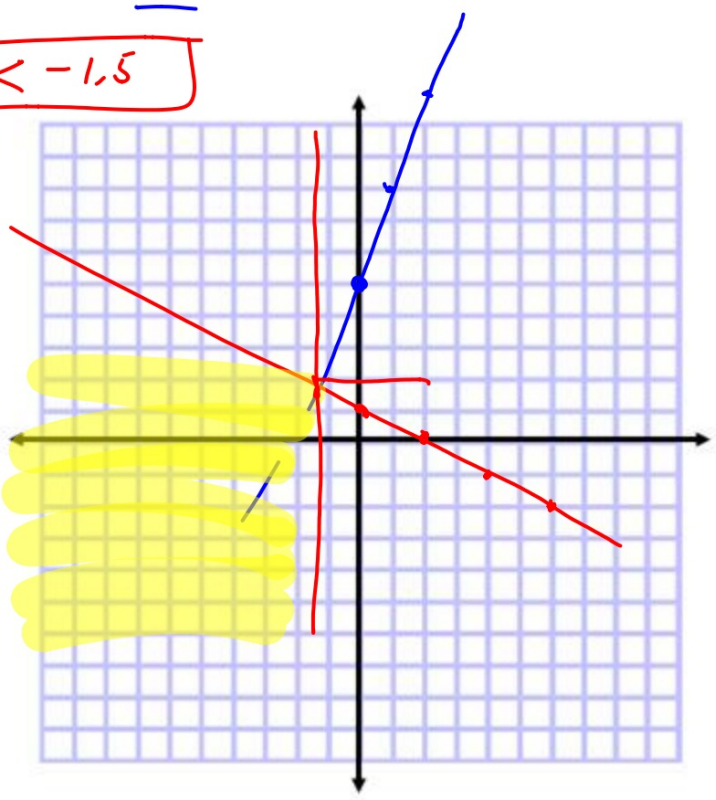
$3x + 5 < -\frac{1}{2}x + 1$

$y = 3x + 5$

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

$x < -1{,}5$



Algebra 1 5.6

Graph linear inequalities on the coordinate plane

Solve inequalities by graphing

linear

boundary

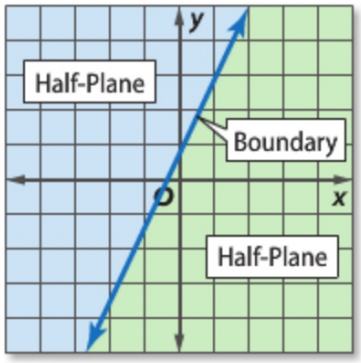
half-plane

open

closed

test point

whiteboards



Example 3 Solve Inequalities From Graphs

Use a graph to solve $3x + 5 < 2$

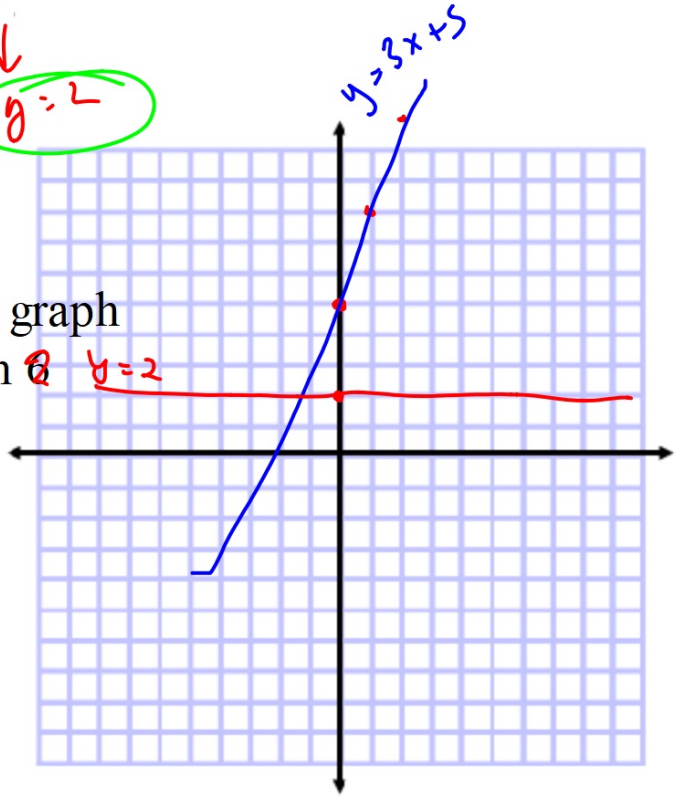
$y = 3x + 5$ $\quad y = 2$

Graph y=3x + 5

Graph y=2

Where is 3x+5 lower on the graph (smaller y-coord = less) than 2

$x < -1$

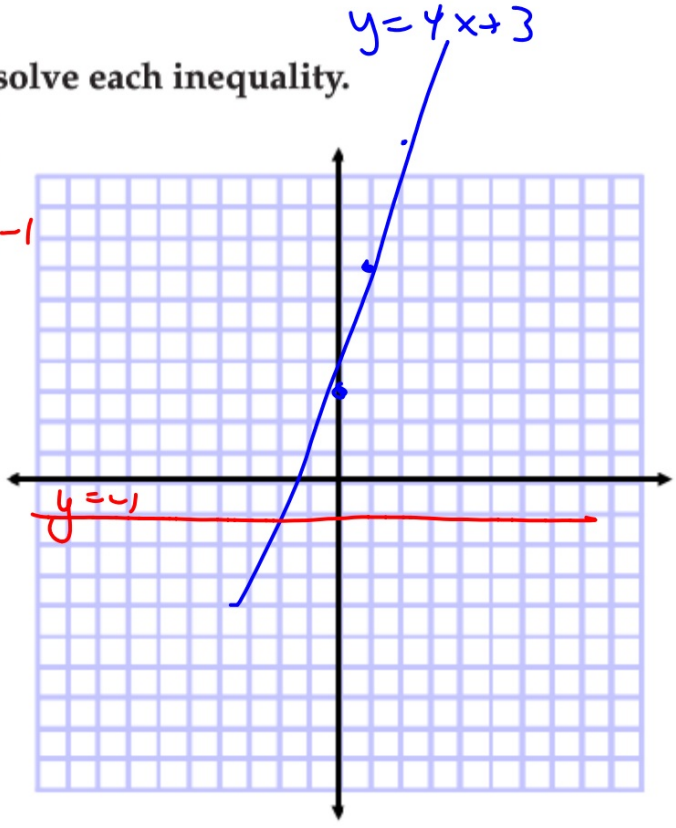


Use a graph to solve each inequality.

3A. $4x + 3 \geq -1$

$y = 4x + 3$

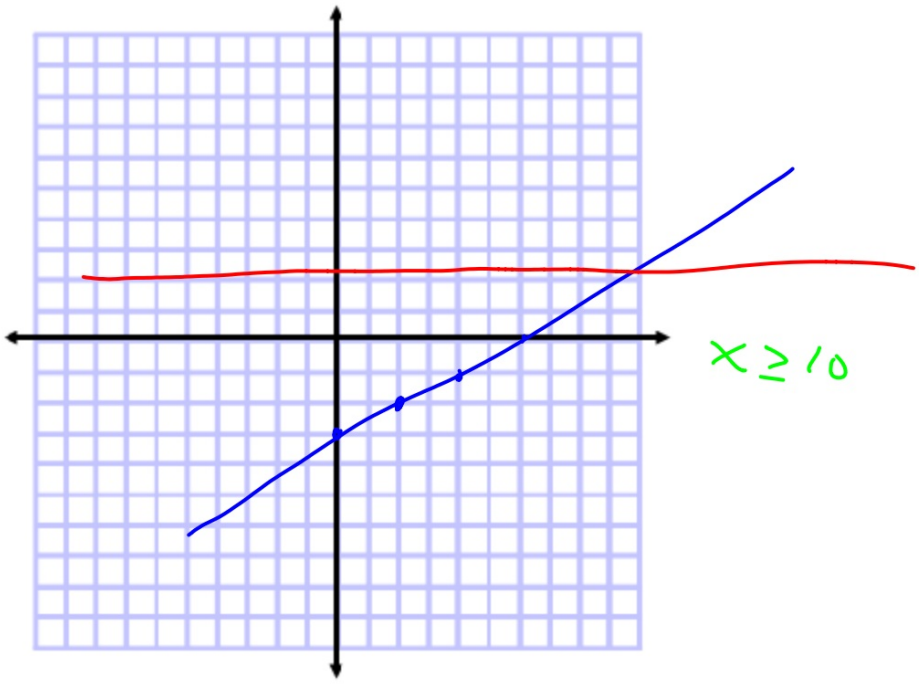
$y = -1$

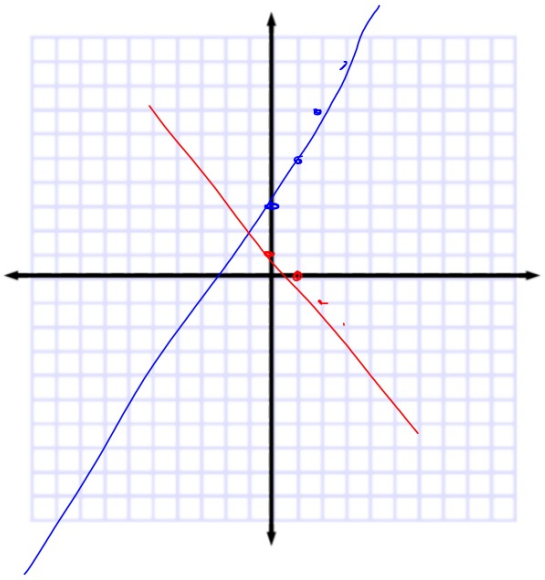


$x \geq -2$

$1/2x - 3 \geq 2$

$y = \frac{1}{2}x - 3$ $y = 2$





$2x + 3 \geq -x + 1$

$y = 2x + 3$ $y = -x + 1$

-1

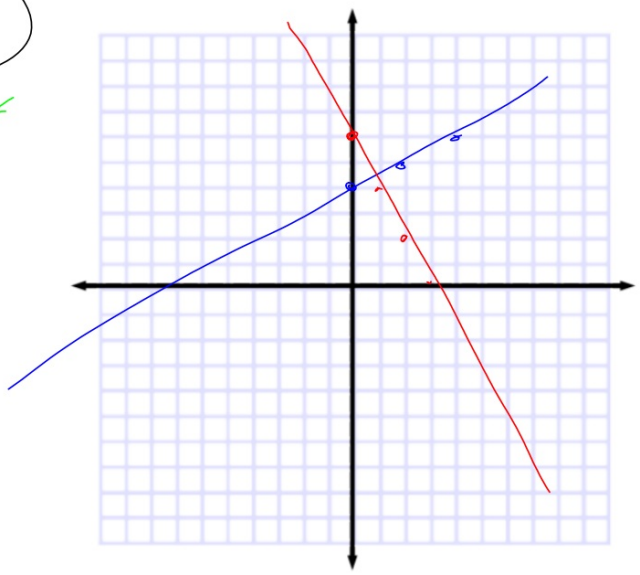
1

$x \geq -1$

$y = \frac{1}{2}x + 4$ $y = -2x + 6$

$\frac{1}{2}x + 4 < -2x + 6$

$x < 1$



et.

$-2x + 5 \geq x - 3$