Algebra 1 5.6

Graph linear inequalities on the coordinate plane

Solve inequalities by graphing

linear

boundary

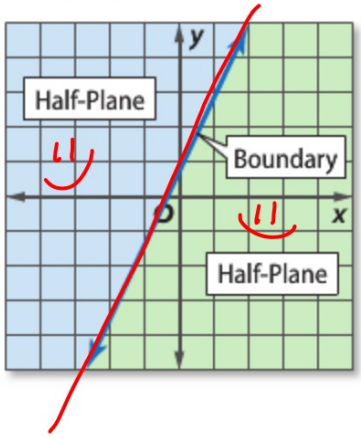
half-plane

open

closed

test point

whiteboards



whiteboards

GuidedPractice **Graph each inequality.**

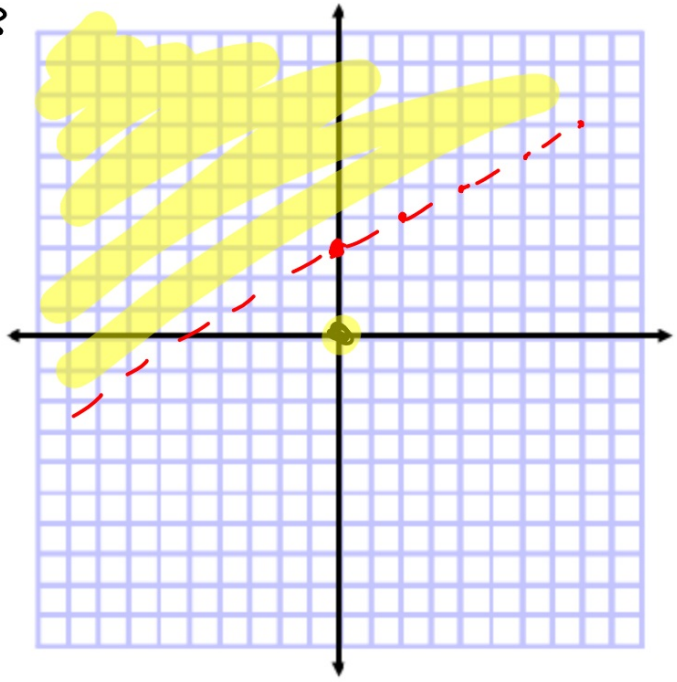
1A. $y > \frac{1}{2}x + 3$

$0 > 0 + 3$

$0 > 3$

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

$y = mx + B$



How is this problem different?

Locate the boundary
(hint: y=)

Example 1 Graph an Inequality (< or >)

Graph $3x - y < 2$.

$0 - 0 < 2$

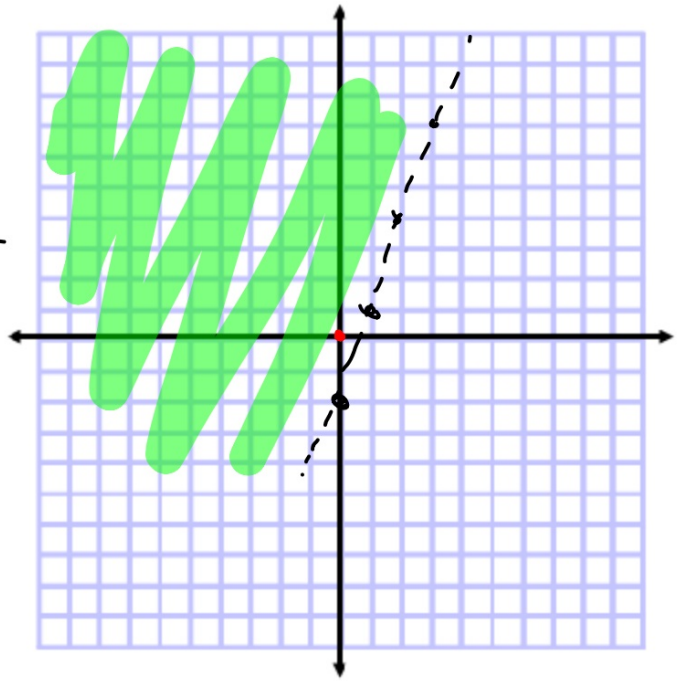
$0 < 2$

$3x - y = 2$

$-3x \quad -3x$

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

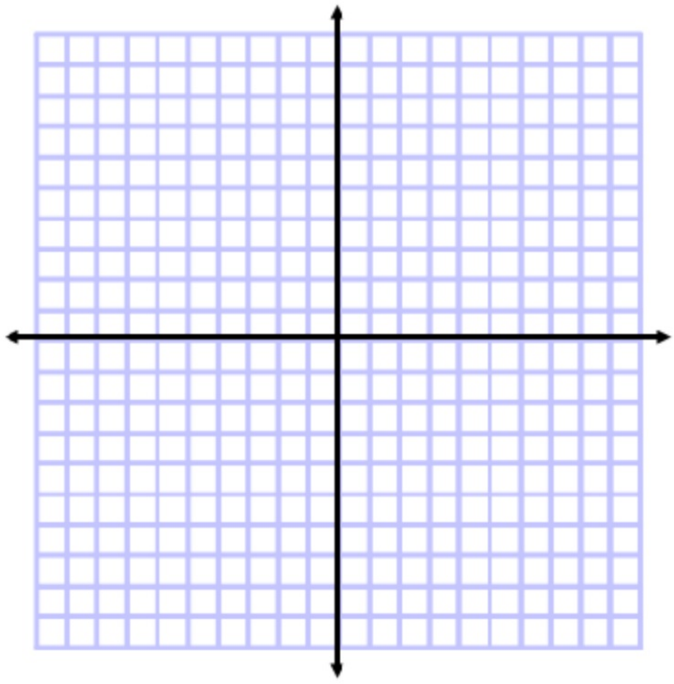
$y = \frac{3}{1}x + \frac{-2}{1}$



1B. $x - 1 > y$

$x - 1 = y$

$y = x - 1$



Example 2 Graph an Inequality (≤ or ≥)

Graph $x + 5y \leq 10$.

$0 + 0 \leq 10$

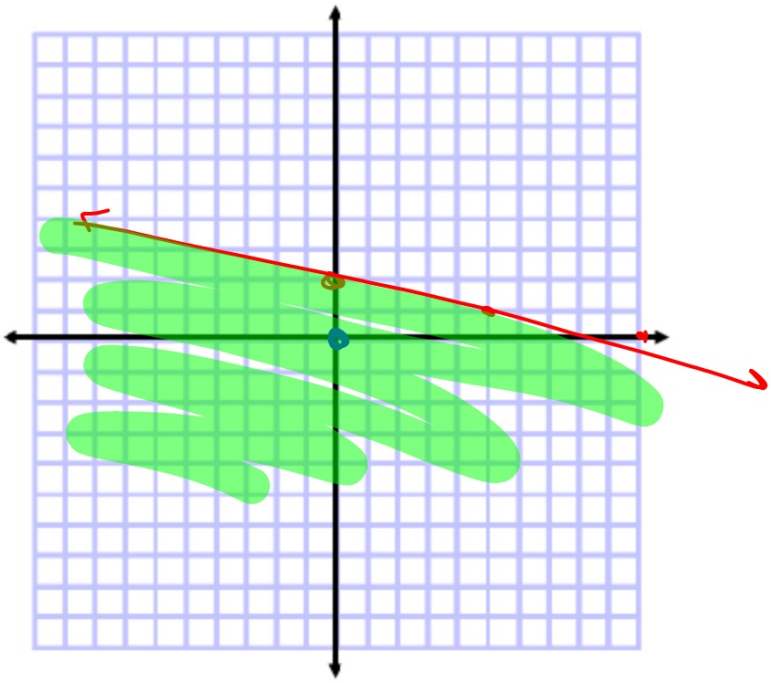
$0 \leq 10$

$x + 5y = 10$

$-x \quad -x$

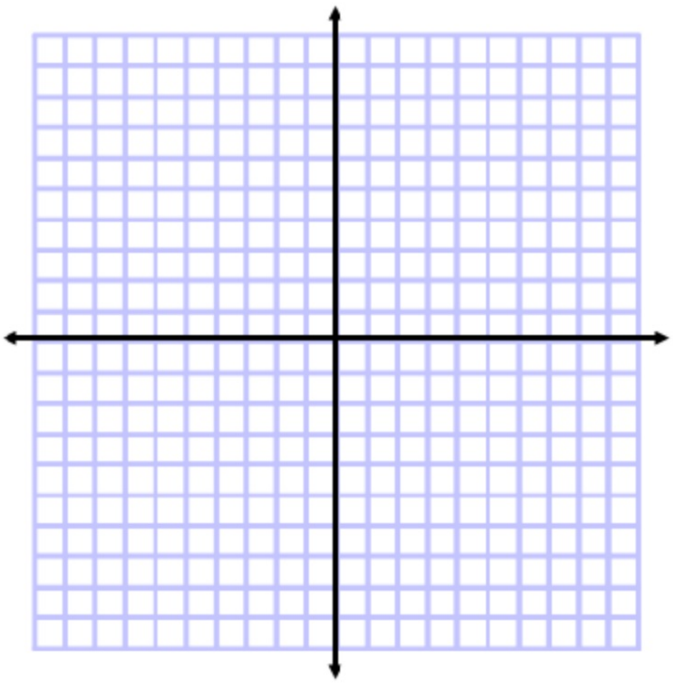
$\frac{5y}{5} = \frac{-x}{5} + \frac{10}{5}$

$y = \frac{-1}{5}x + 2$



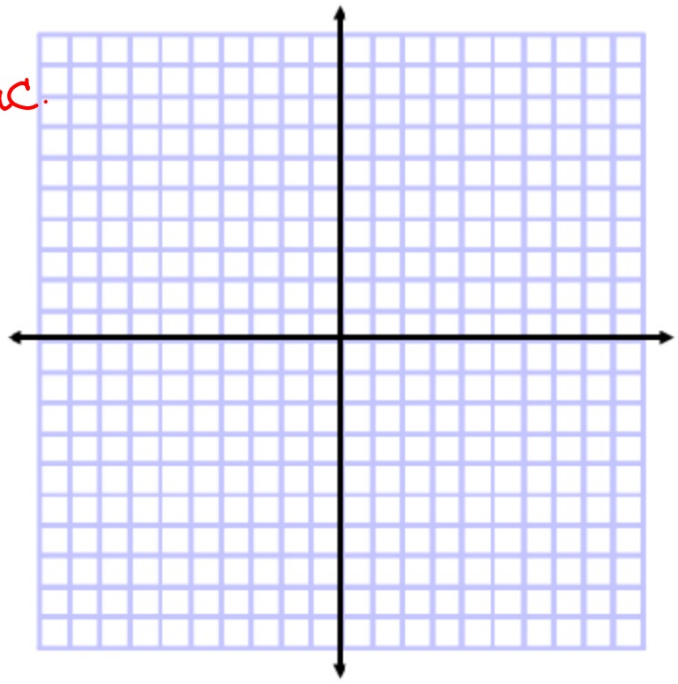
Graph each inequality.

2A. $x - y \leq 3$



2B. $2x + 3y \geq 18$

WB 5.6 prac.



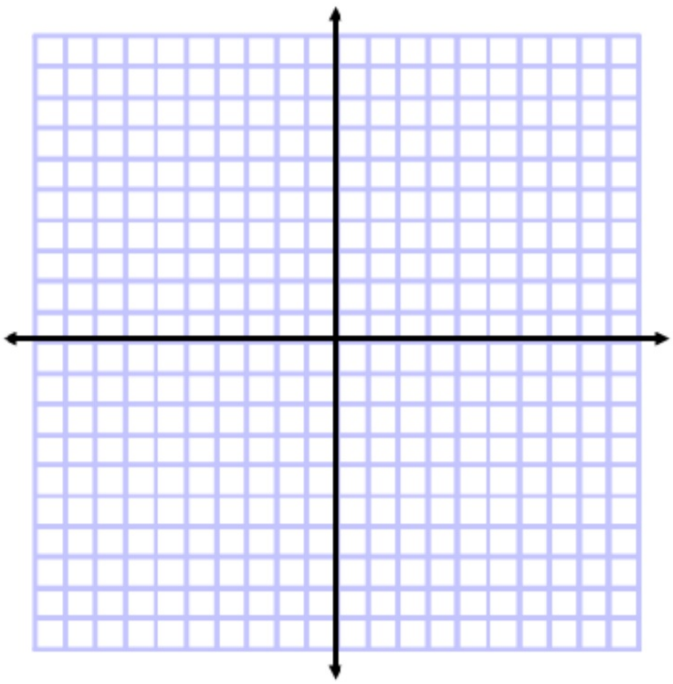
Example 3 Solve Inequalities From Graphs

Use a graph to solve $3x + 5 <$ 6

Graph y=3x + 5

Graph y=6

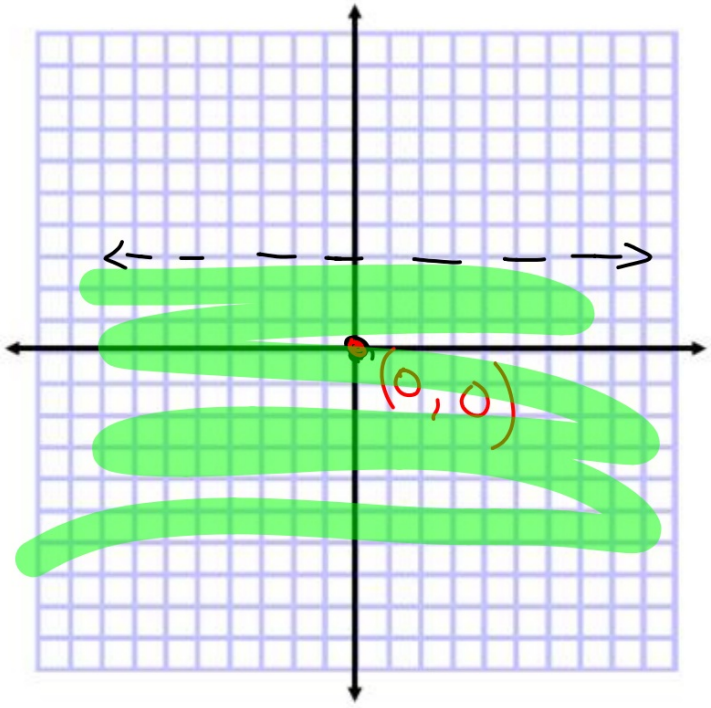
Where is 3x+5 lower on the graph (smaller y-coord = less) than 6



$y < 3$

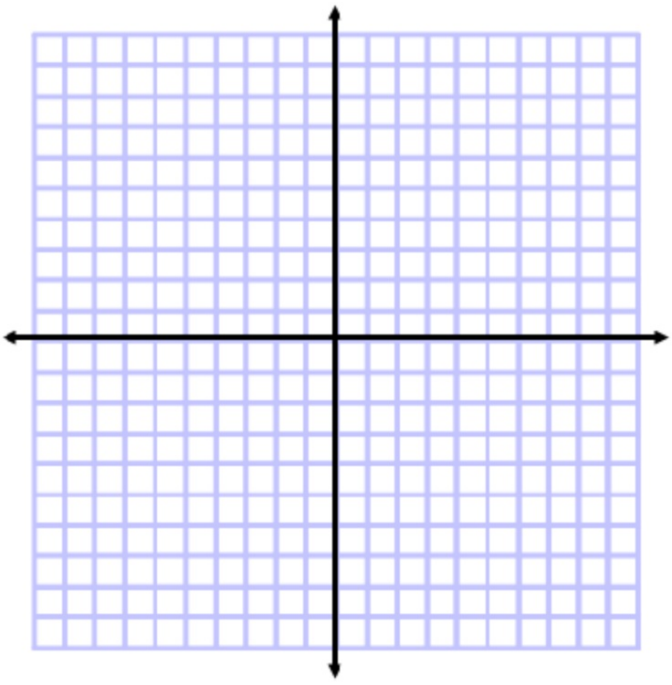
$0 < 3$

$y = 3$



Use a graph to solve each inequality.

3A. $4x - 3 \geq -7$



3B. $-2x + 6 > 12$