

Algebra 1 6.6

Solve systems of linear inequalities by graphing\* Ch. 5.6

Apply systems of linear inequalities

\* linear inequality\*  
system

boundary —

open  $< >$  - - -

closed  $\leq \geq$  —

\*  $y = k$  (horizontal)

\*  $x = k$  (vertical)

whiteboards

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

$$0 < 0 + 4$$

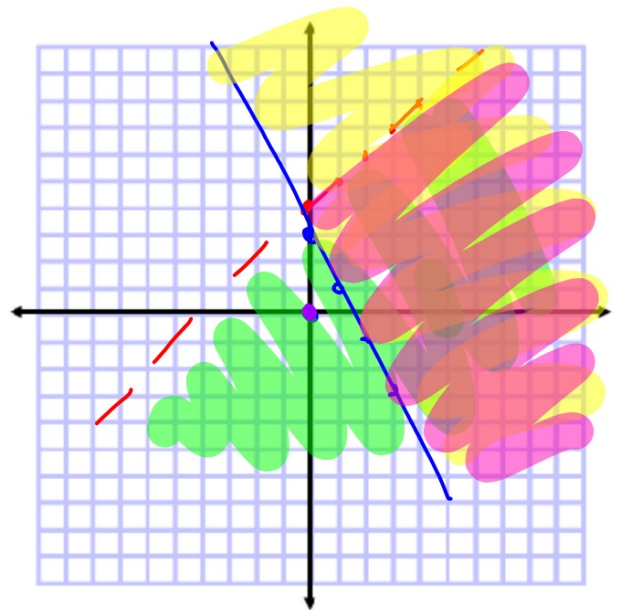
$$y < x + 4$$

$$y = x + 4$$

$$0 \geq 0 + 3$$

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

$$y = -2x + 3$$



Whiteboards

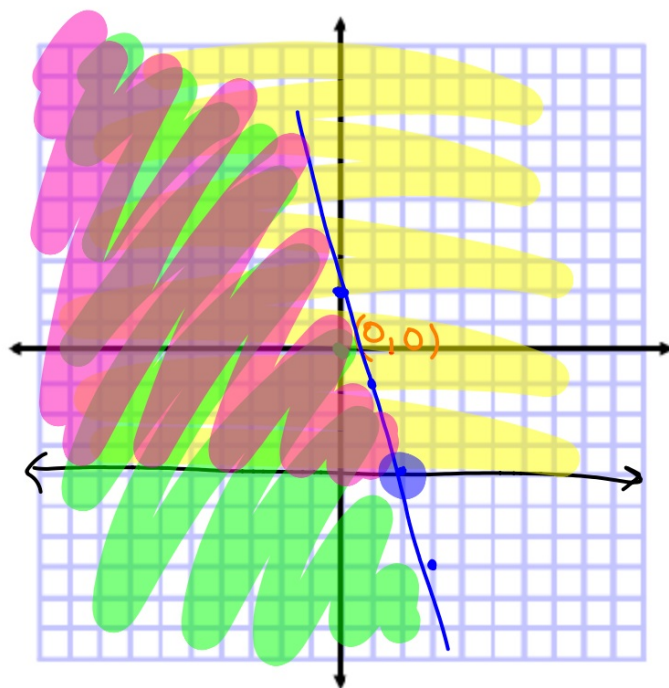
1C  $y \geq -4$   $0 \geq -4$

$3x + y \leq 2$

$0 + 0 \leq 2$

$y = -4$

$$\begin{array}{r} 3x + y = 2 \\ -3x \quad -3x \\ \hline y = -3x + 2 \end{array}$$

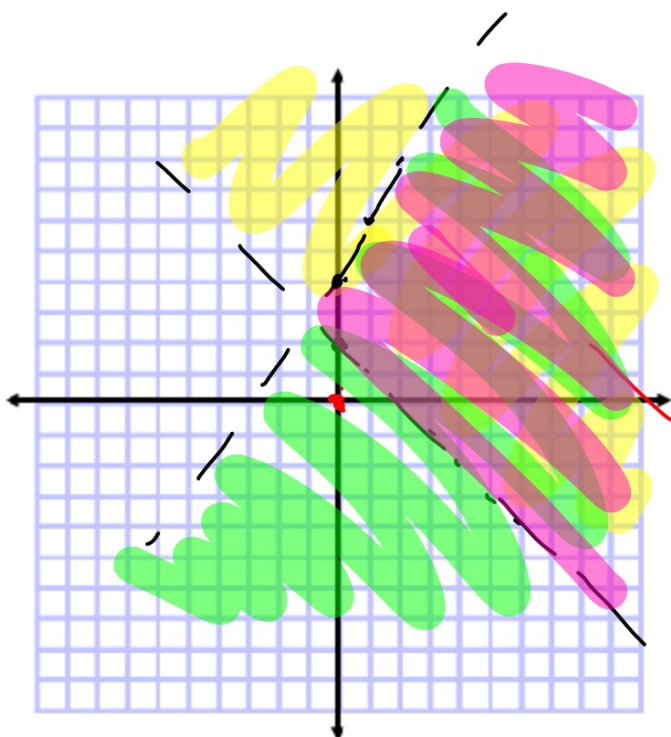


$$0 > 2$$

10.  $x + y > 2$   
 $-4x + 2y < 8$

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

$$y = 2x + 4$$



Where is it shaded by both?

### Example 2 No Solution

Solve the system of inequalities by graphing.

$$3x - y \geq 2$$

$$3x - y < -5$$

$$0 > 2$$

$$0 - 0 < -5$$

$$0 < -5$$

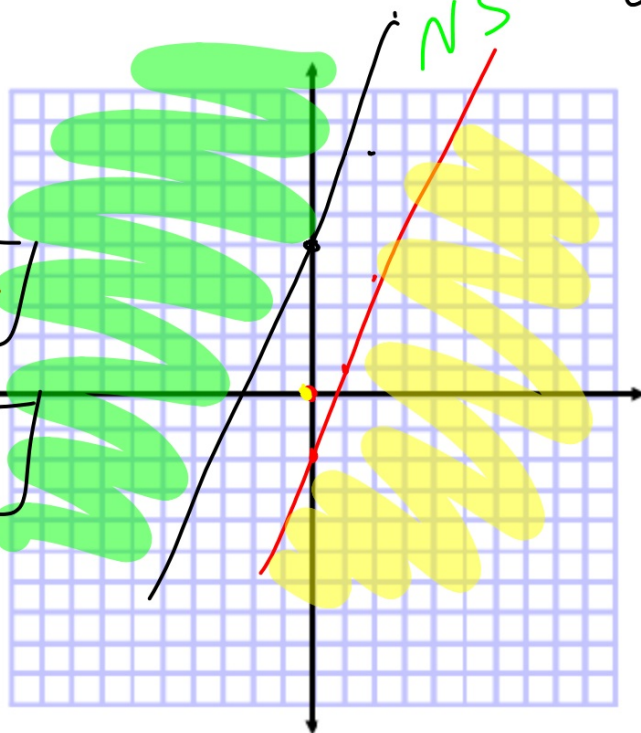
$$3x - y = 2$$

$$y = 3x - 2$$

$$3x - y = -5$$

$$y = 3x + 5$$

use = for boundary  
Orig for test point

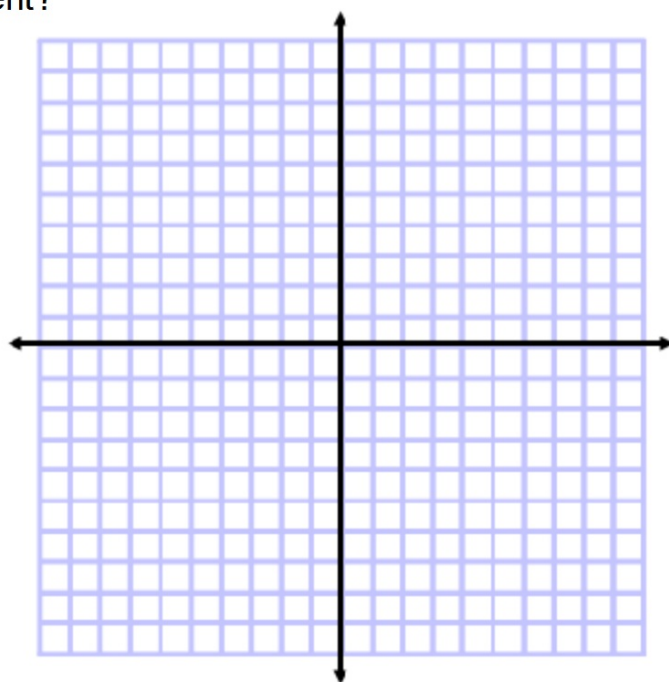


How is this problem different?

**Guided**Practice

**2A.**  $y > 3$

$y < 1$



**2B.**  $x + 6y \leq 2$   
 $y \geq -\frac{1}{6}x + 7$

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