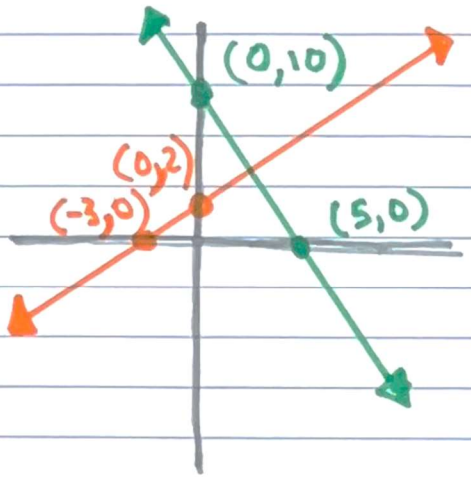
2-7

LESSON [redacted] → Introduction to Systems of Inequalities

## Equations

$y = -2x + 10$

$2x - 3y = -6$




## Solution

$2x - 3(-2x + 10) = -6$

$2x + 6x - 30 = -6$

$8x - 30 = -6$

$+30 \quad +30$

$8x = 24$

$x = 3$

$y = -2(3) + 10$

$y = -6 + 10$

$y = 4$

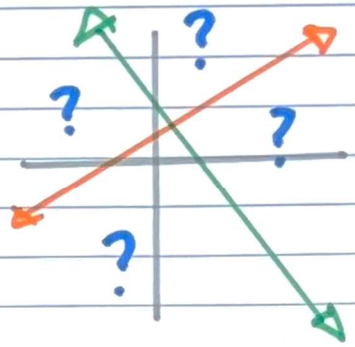
$(3, 4)$

## Inequality

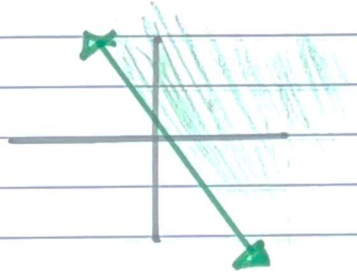
$y \geq -2x + 10$

$2x - 3y \geq -6$

## Solution




Easy $y \geq -2x + 10$

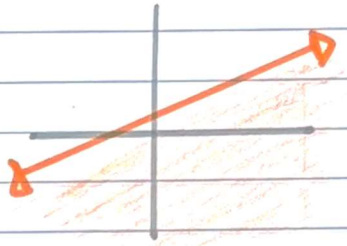


Tricky $2x - 3y \geq -6$

$-3y \geq -2x - 6$

TURNS around!

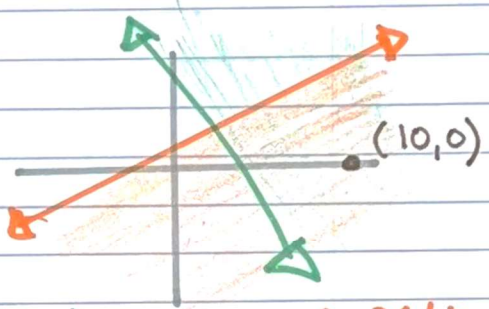
$y \leq \frac{2}{3}x + 2$



Both! is! Solution!

$y \geq -2x + 10$

$2x - 3y \geq -6$




Check! (10, 0)
x y

$0 \geq -2(10) + 10$

$0 \geq -10$

Yes!

$2(10) - 3(0) \geq -6$

$20 \geq -6$

Yes!