

# 5.5 Solving Linear Inequality

Ex1)  $y \geq \frac{1}{2}x + 2$

Solid Line

1) Graph the linear Equation

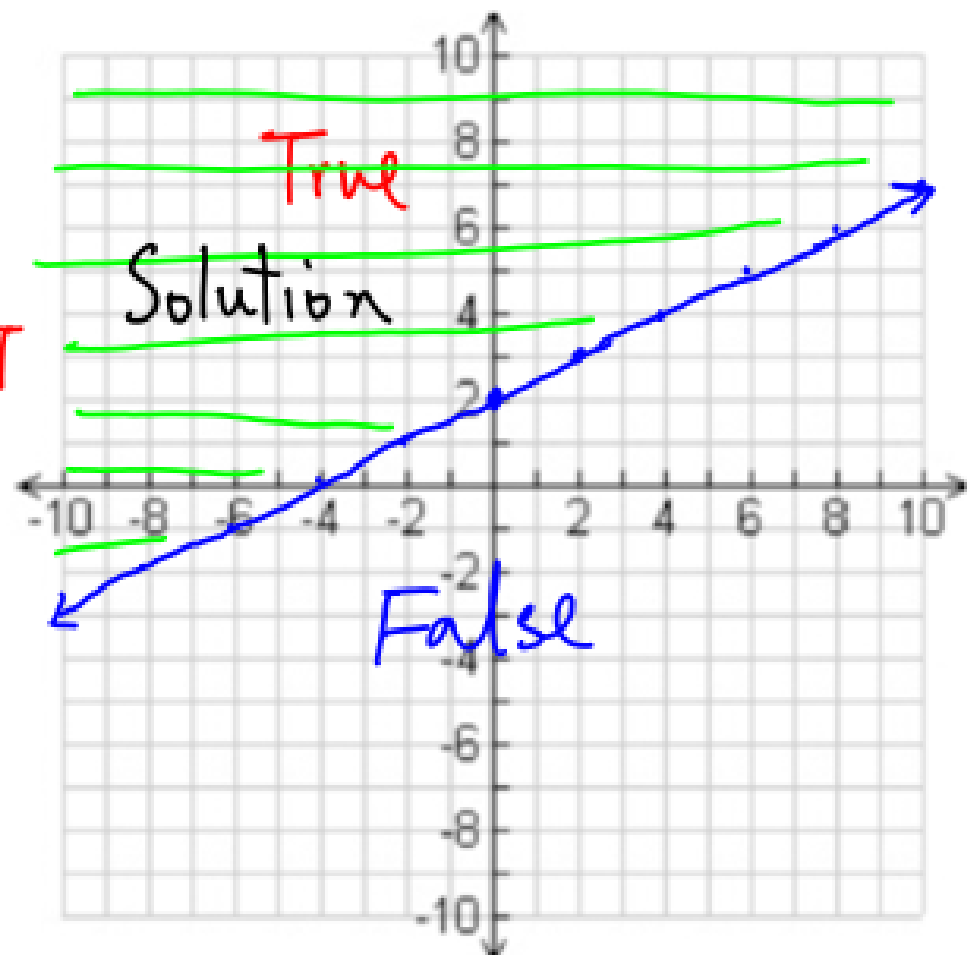
2) Test the region !!

Pick any one point that is NOT on the line and plug into the original equation to check the solution region. Choose  $(0,0)$

$0 \geq \frac{1}{2}(0) + 2$  False

For  $\leq$  or  $\geq$  Graph with **Solid Line**.

For  $<$  or  $>$  Graph with **Dotted Line**.



$$\text{Ex2) } 3x - 2y < 4$$

↑  
dotted line

$$\frac{-2y}{-2} < \frac{-3x + 4}{-2}$$

Flip, because  
dividing a "-"

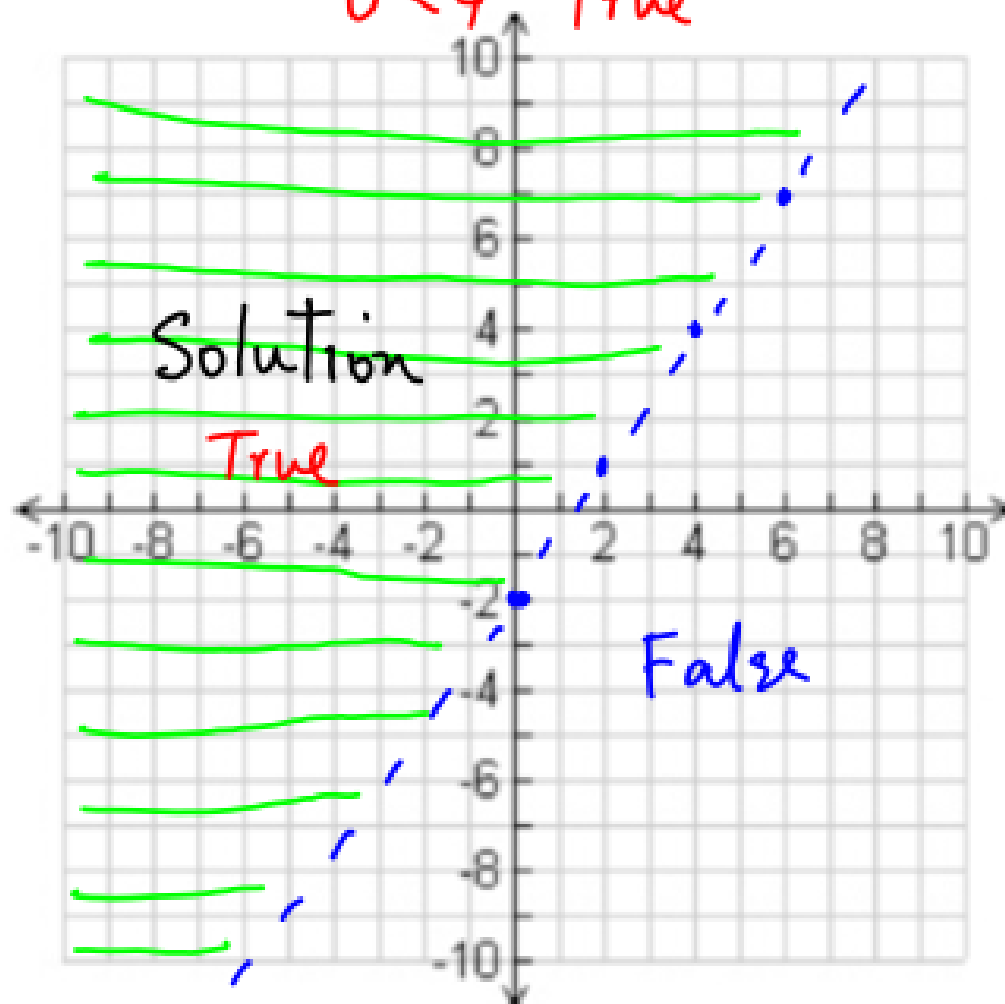
$$y > \frac{3}{2}x - 2$$

Test the region !!

Choose (0, 0)

$$3(0) - 2(0) < 4$$

0 < 4 True



Ex3)  $y > -4$

dotted line

(Horizontal)

Test the region !!

Choose (0, 0)

$0 > -4$  True

