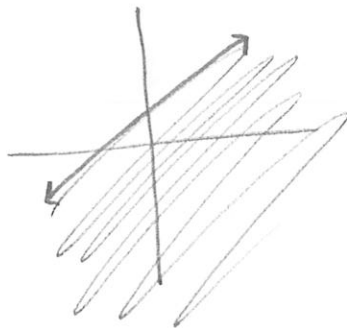


Linear inequality in 2 variables

$$Ax + By \leq C$$

**Ex 1**Graph $3x - 2y \leq 6$

$$\begin{array}{r} -3x \\ \hline -2y \leq \frac{-3x + 6}{-2} \end{array}$$

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

 $y \geq$ Shade above $y \leq$ Shade below

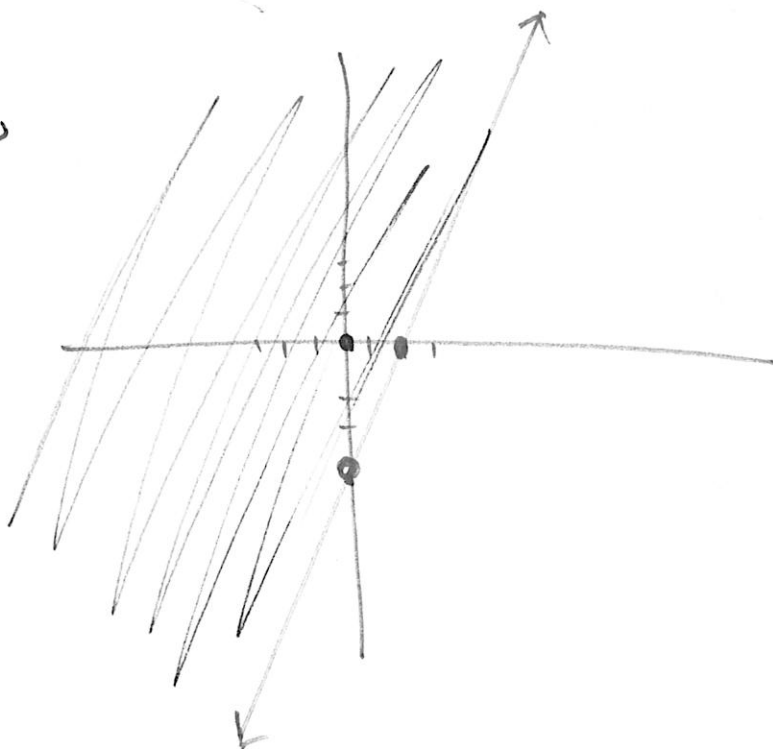
test point to
decide on shading

 $(0, 0)$

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

$$3(0) - 2(0) \leq 6$$

$$0 \leq 6 \text{ True}$$

Shading includes $(0, 0)$ 

Graph $3x - 2y \leq 6$ using x- and y-intercepts

$$\begin{array}{l} \text{x-intercept} \\ y = 0 \end{array}$$

$$\hookrightarrow 3x - 2(0) \leq 6$$

$$\frac{3x}{3} \leq \frac{6}{3}$$

$$x = 2$$

$$(2, 0)$$

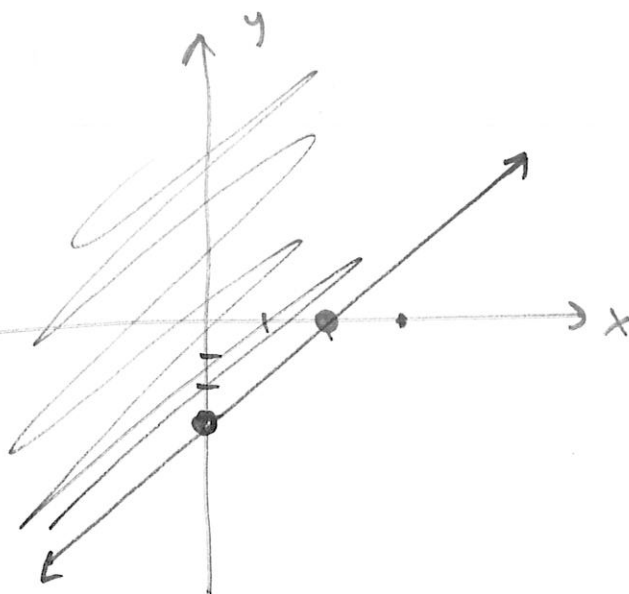
$$\begin{array}{l} \text{y-intercept} \\ x = 0 \end{array}$$

$$3(0) - 2y \leq 6$$

$$\frac{-2y}{-2} \leq \frac{6}{-2}$$

$$y = -3$$

$$(0, -3)$$



$y \geq >$ Shade above if y is isolated.
 $y \leq <$ " below "

For $Ax - By$

\uparrow the opposite is true

Ex 2Graph $x + 4y < 4$

Line solid

dashed?

Shade above

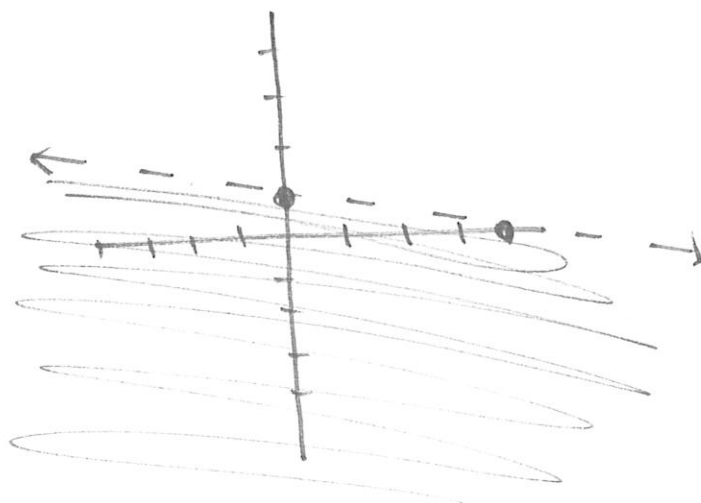
below?

x	y
4	0
0	1

$$x + 0 = 4$$

$$0 + \frac{4y}{4} = \frac{4}{4}$$

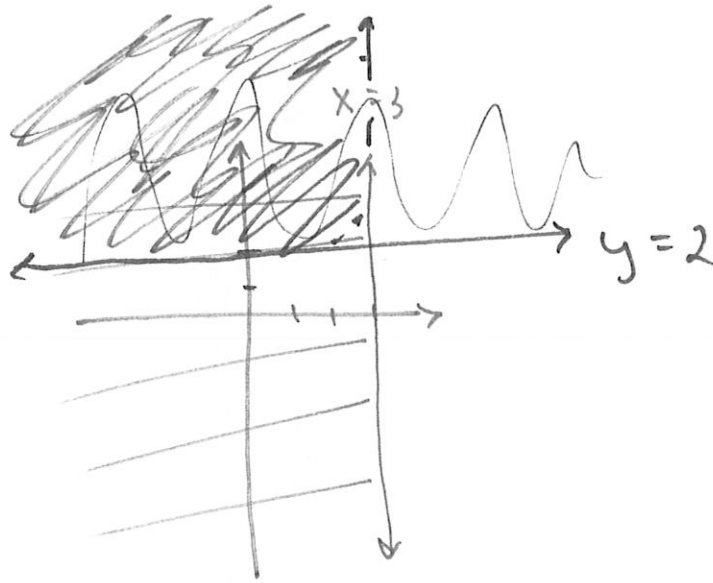
$$y = 1$$



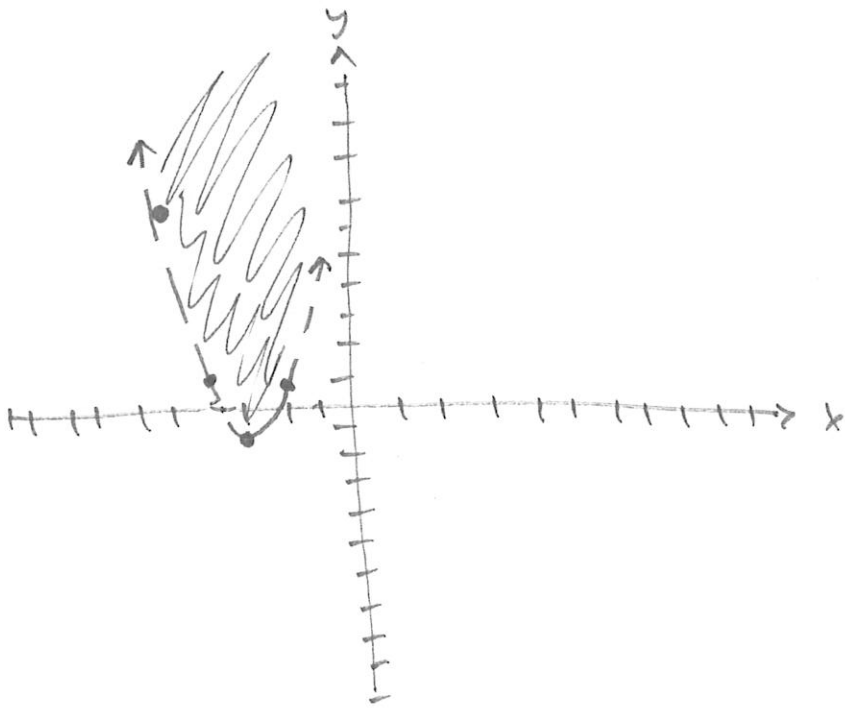
Ex

$$x \leq 3$$

$$y \geq 2$$



hw (24) $y > 2(x+3)^2 - 1$



x	y
-3	-1
-2	1
-1	7
0	17
1	31
-6	17
-5	7
-4	1