Graphing linear inequalities

Ex1: $y > 2x - 1$

1. Boundary Line $y = 2x - 1$
   - $>$ Open circles, dashed line
   - $m = \frac{2}{1}$ ↑ 2 → 1
   - $(0, -1)$
2. Test a point

$(-1, 0)$

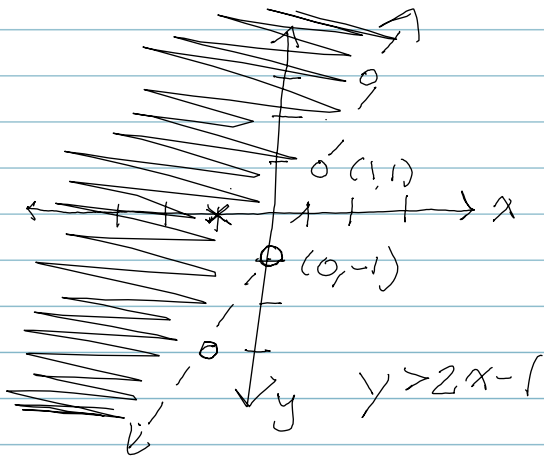
$y > 2x - 1$

$0 > 2(-1) - 1$

$0 > -2 - 1$

$0 > -3$

True



Ex2: $3x - 2y \leq 6$

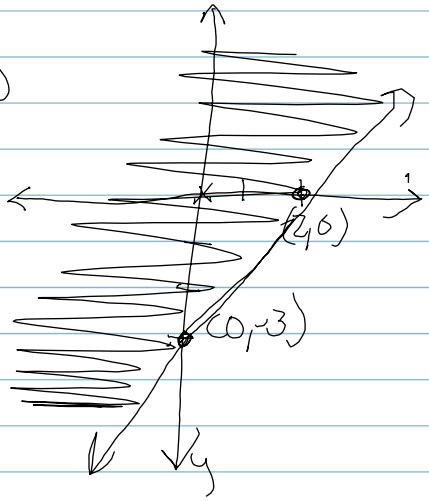
1. Boundary line $3x - 2y = 6$
   - $\leq$ → solid line, closed circles
   - x int $(2, 0)$: $3x = 6$, $x = 2$
   - y int $(0, -3)$: $-2y = 6$, $y = -3$
2. test a point $(0, 0)$

$3x - 2y \leq 6$

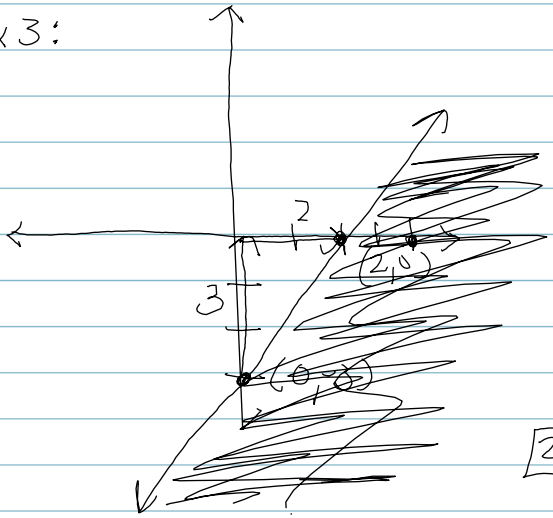
$0 - 0 \leq 6$

$0 \leq 6$

T



Ex 3:



1 Boundary Line =

$y = mx + b$

$m = \frac{3}{2}$ $(0,-3)$

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

2 solid $\geq, \leq$

$y \square \frac{3}{2}x + -3$

Test $(4,0)$ $0 \square \frac{3}{2} \cdot 4 + -3$

$0 \square 6 + -3$

$0 \boxed{\leq} 3$

$$y \leq \frac{3}{2}x + (-3)$$