Graphing a Linear Inequality (Two Variables):

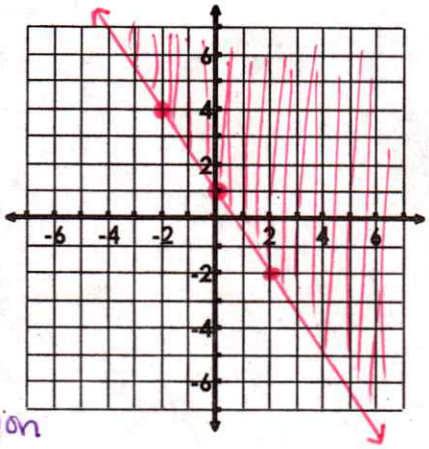
1. Sketch the Line given be the equation. (Solid if ≥ or ≤, dashed if < or >). This line separates the coordinate plane into 2 halves
   - In one half-plane - all the points are solutions.
   - In the other half-plane - none of the points are a solution.
2. You can decide which half to Shade by testing One point.
3. Shade the half that has the Solutions to the inequality.

6. $y \geq -\frac{3}{2}x + 1$

Solid or Dashed

· Solid
· Shade above

To check (0,0)
$0 \geq -\frac{3}{2}(0) + 1$
$0 \geq 1$
false
(0,0) is not a solution

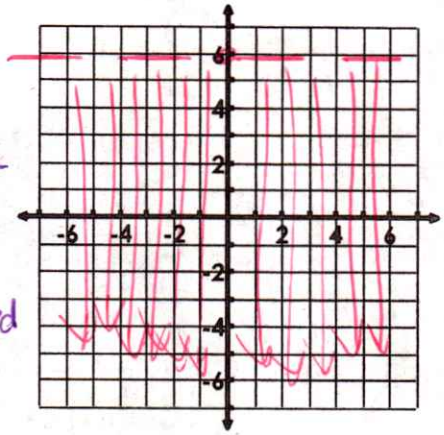


7. $y < 6$

Solid or Dashed

· dashed
· Shade below

Check (0,0)
$0 < 6$
True, shaded correctly



8. $4x - 2y \leq 6$

$-4x \quad -4x$

$\frac{-2y}{-2} \leq \frac{-4x}{-2} + \frac{6}{-2}$

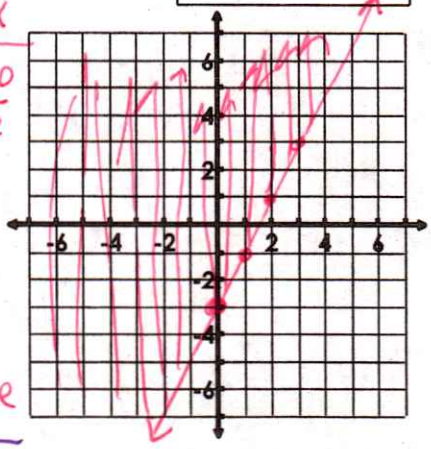
$y \geq 2x - 3$

* flip ineq.

· Solid
· Shade above

Check (0,0)
$4(0) - 2(0) \leq 6$
$0 \leq 6$ true, shaded correctly

Solid or Dashed



9. $2x - 6y > 18$

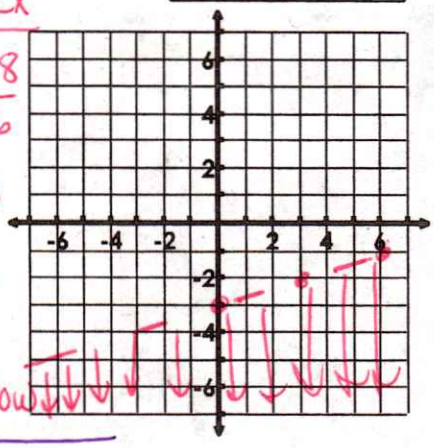
$-2x \quad -2x$

$\frac{-6y}{-6} > \frac{-2x}{-6} + \frac{18}{-6}$

$y < \frac{1}{3}x - 3$

* flip ineq.

· dashed
· Shade below

Check (0,0)
$2(0) - 6(0) > 18$
$0 > 18$
False (0,0) is not shaded

Solid or Dashed