Agenda

Homework:

- **Graphing Linear Inequalities**
- **AM**

Materials:

- **Notebook**
- **Ruler**

Do Now:

- **Take out vocab homework**
- **<u>On the next left page of your notebook</u>:**

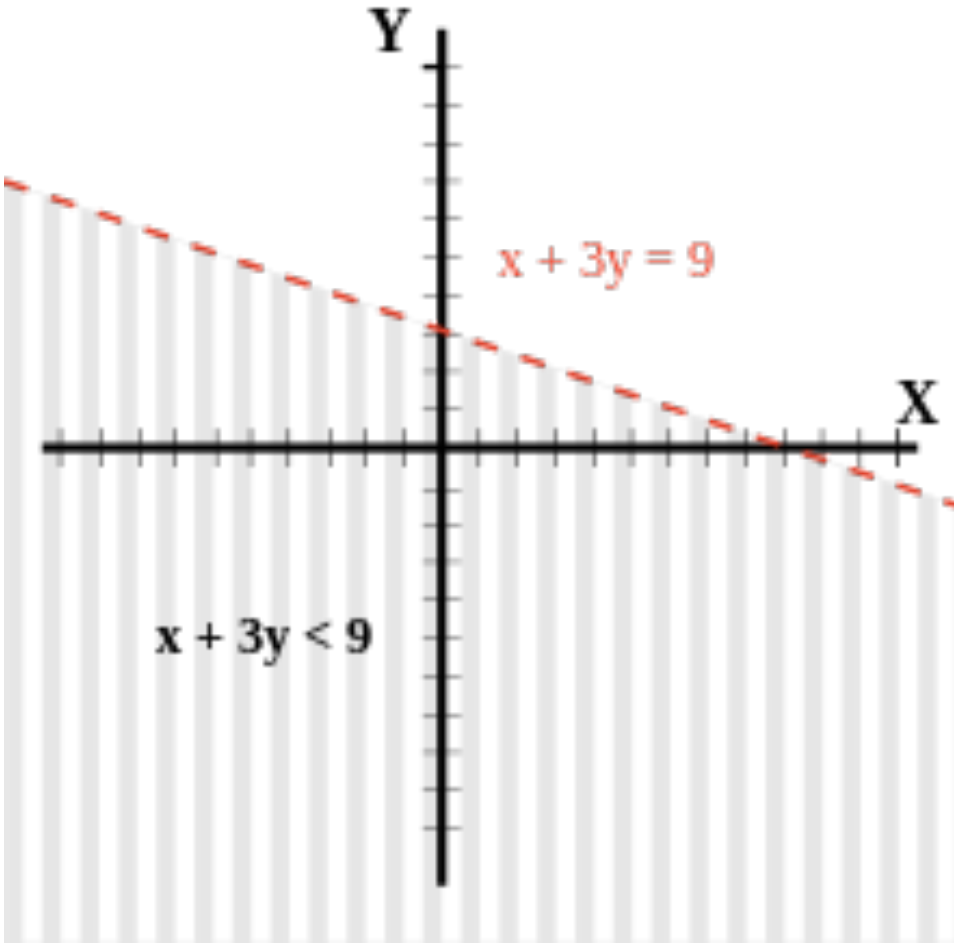
Rewrite 2x – 3y = 15 in slope-intercept form

Do Now

- **Rewrite $2x - 3y = 15$ in slope-intercept form**

Linear Inequality

- Similar to a linear equation
- HOWEVER, when graphed, the solution is a HALF-PLANE, rather than a single line



Graph the solution for $x - 2y < 6$

- Step 1: Graph $x - 2y < 6$

Method 1: Rewrite in y = mx + b form

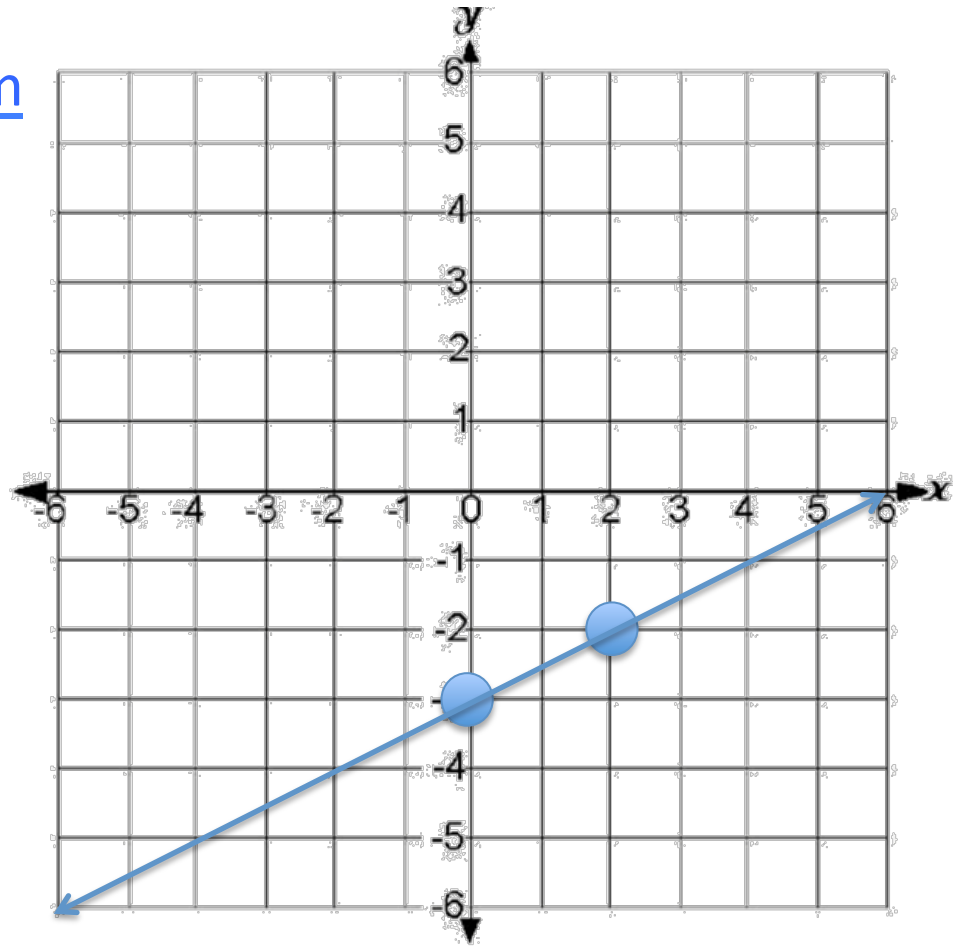
$$x - 2y < 6$$

$$-x \qquad\qquad -x$$

$$-2y < -x + 6$$

$$-2 \quad -2 \quad -2$$

$$y > \tfrac{1}{2}x - 3$$

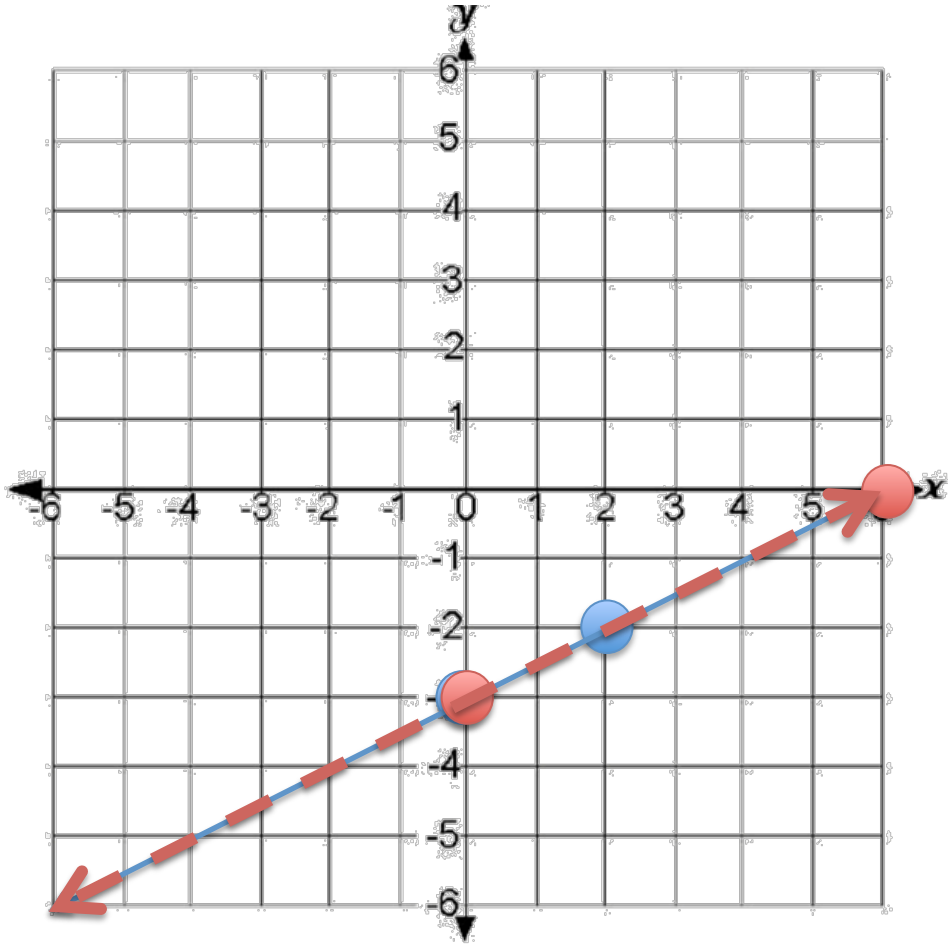


Graph the solution for $y > \frac{1}{2}x - 3$

- Step 2: Check the inequality sign **>**

If < or > :
Use a DASHED/DOTTED line

If ≤ or ≥ :
Use a SOLID line

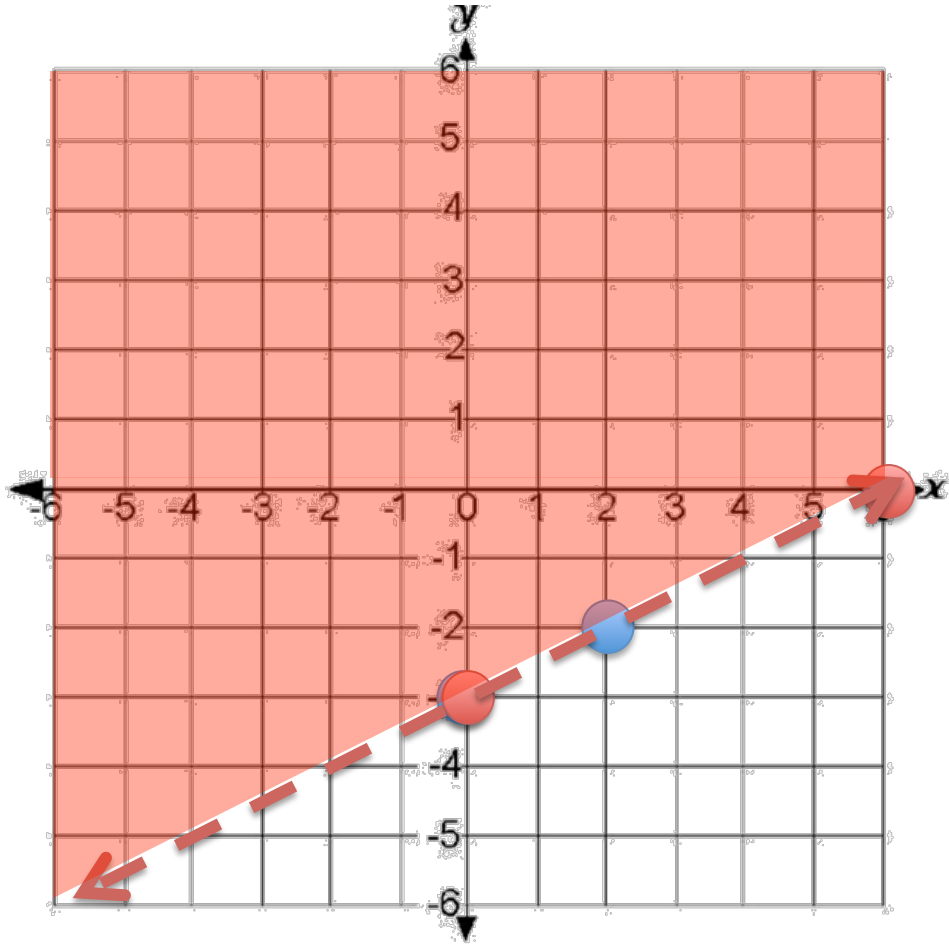


Graph the solution for $y > \frac{1}{2}x - 3$

- Step 3: Shade using the inequality sign >

If < or ≤:
Shade BELOW line

If > or ≥ :
Shade ABOVE line

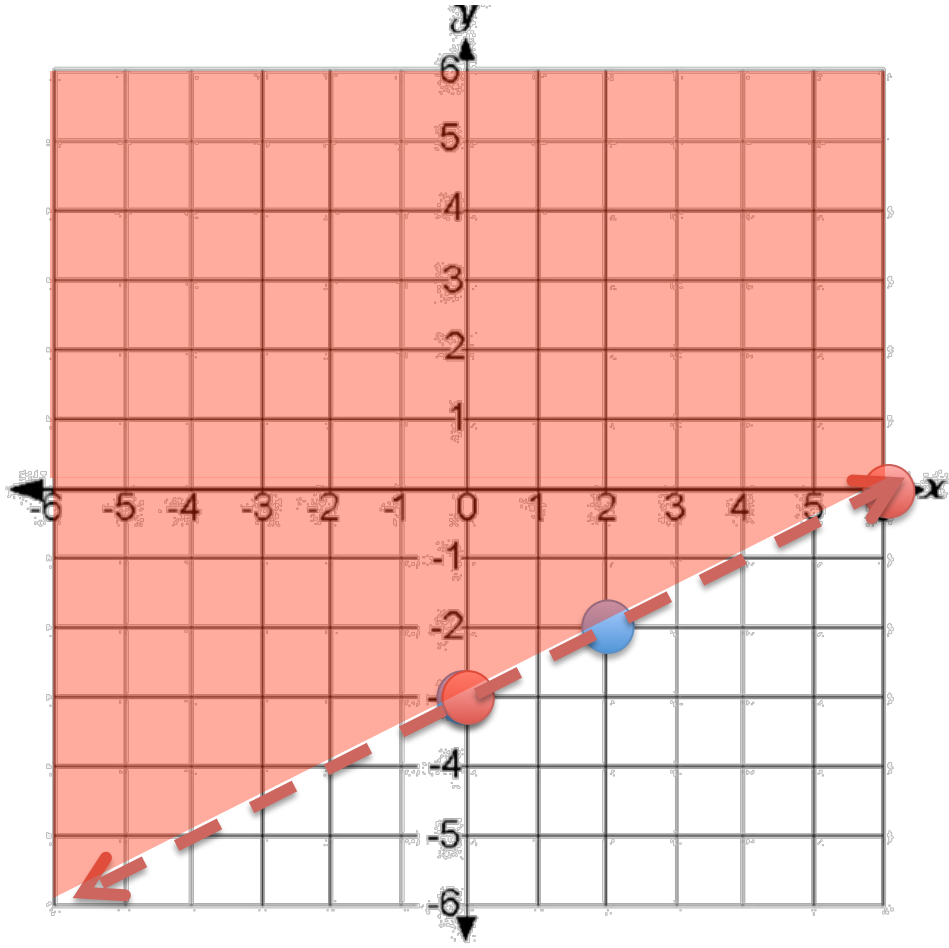


Graph the solution for $x - 2y < 6$

- Step 4: Check your solution

Test a point:

- Usually easiest to test (0,0)
- Plug in x & y coordinates



MINI QUIZ

- In your notebook, next to your Do Now problem:
  - **Sketch** the graph of **2x – 3y > 15**
  - Be sure to use the appropriate line type and shade in the correct half plane