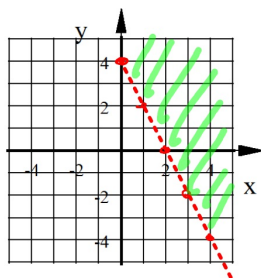


Sections 2-7 and 3-3: Graphing linear inequalities and systems of inequalities

Graph each inequality.

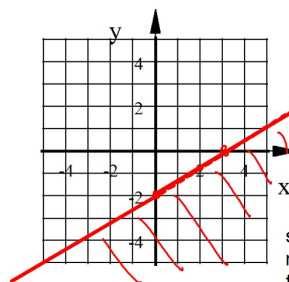
$$y > -2x + 4$$



"y is greater" means to shade above the line.

Use a dashed line because the inequality doesn't have the "or equal to" part.

$$24x - 36y \geq 72$$



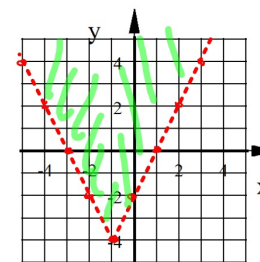
$x\text{-int} = 3$   
 $y\text{-int} = -2$   
**TEST**  
 $(0,0)$   
 $0 \geq 72$

since the origin makes the inequality false don't shade the side with the origin...shade the other side.

Graphing other kinds of inequalities:

Graph:

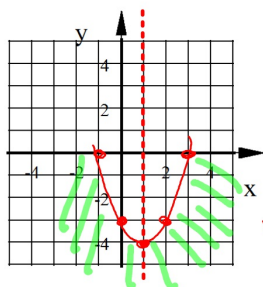
$$y > 2|x + 1| - 4$$



Graph this inequality.

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

$$\begin{array}{c|c} x & y \\ \hline 3 & 0 \end{array}$$



**LOS:**  
 $x = \frac{-b}{2a} = \frac{2}{2}$   
 $x = 1$   
**Vertex**  
 $(1, -4)$

Sec 3-3: Graphing systems of inequalities

More than one inequality on the same graph.

### Solution to a system of Inequalities:

The region that is a solution to all inequalities at the same time.

The area that gets shaded multiple times, once for each inequality.

This is called the solution region or the feasible region.