

Graphing an Inequality

1-Variable: **On a number line**

Solid Dot (EQUAL TO): \leq \geq \bullet

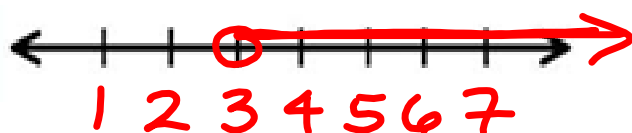
Hollow Dot (NOT EQUAL TO): $>$ $<$ \circ

Test a point on one side of the endpoint.

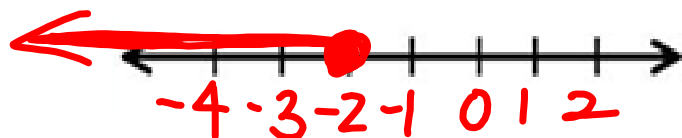
If it works, **shade on same side.**

If it doesn't work, **shade on opposite side.**

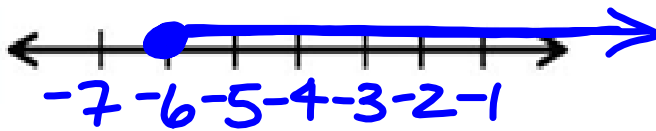
Ex. 1 $x > 3$



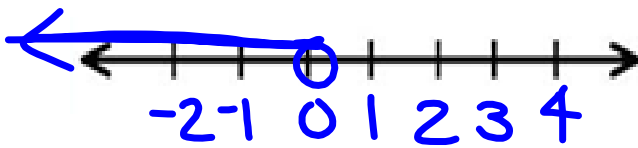
Ex. 2 $x \leq -2$



Ex. 3 $x \geq -6$



Ex. 4 $x < 0$



$$\begin{array}{c} x < 0 \\ \hline 0 > x \\ x < 0 \end{array}$$

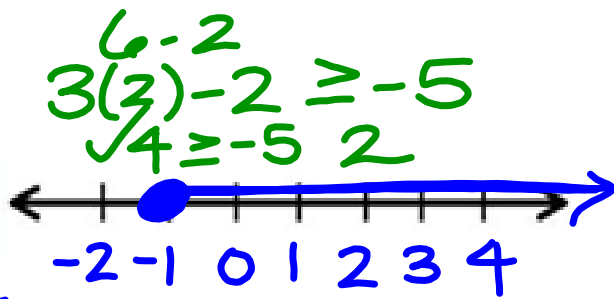
Ex. 5 $-2x < -8$
 $\frac{-2x}{-2} < \frac{-8}{-2}$
 $x > 4$



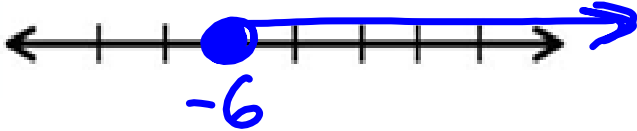
Ex. 6 $3x - 2 \geq -5$
 $+2 \quad +2$

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


$$x \geq -1$$



Ex. 7 $4 - 2x \leq 16$

$$\begin{array}{r} 4 - 2x \leq 16 \\ -4 \quad -4 \\ \hline -2x \leq 12 \\ \frac{-2x}{-2} \leq \frac{12}{-2} \\ x \geq -6 \end{array}$$


Ex. 8 $5(x + 1) > -15$

$$\begin{array}{r} 5(x + 1) > -15 \\ 5x + 5 > -15 \\ -5 \quad -5 \\ \hline 5x > -20 \\ \frac{5x}{5} > \frac{-20}{5} \\ x > -4 \end{array}$$


Shaded Region =

ALL POSSIBLE ANSWERS FOR
THE INEQUALITY