

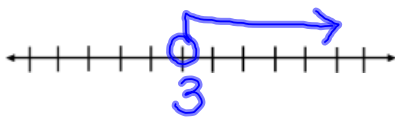
Linear Inequalities

Section 3.1

Solve and graph the following inequalities.

1) $6x - 10 > 8$

$$\begin{array}{r} +10 \quad +10 \\ \hline 6x > 18 \\ \frac{6x}{6} > \frac{18}{6} \\ \boxed{x > 3} \end{array}$$

 $> <$ open circle

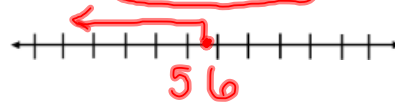
2) $6x - 3 \leq 8 \cdot 4$

$$\begin{array}{r} \swarrow \\ 6x - 3 \leq 32 \\ +3 \quad +3 \end{array}$$

$$\frac{6x}{6} \leq \frac{35}{6}$$

$$\boxed{x \leq \frac{35}{6}}$$

$\frac{35}{6} = 6.83$

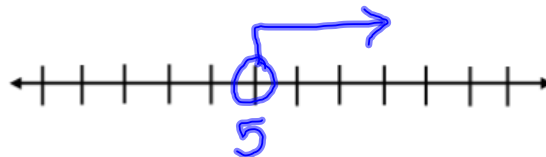
 $\geq \leq$ closed circle

Graph the following inequalities.

* Read the variable 1st

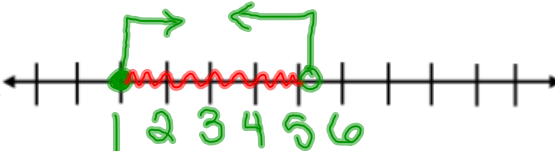
3) $5 < m$

$m > 5$



4) $1 \leq x < 5.2$

closed open

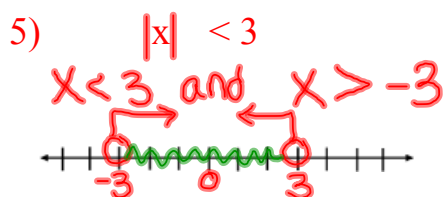


Absolute Value Inequalities * Distance from 0

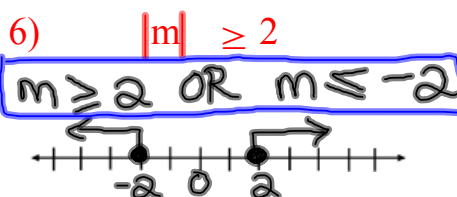
$> \geq$
great "OR" than Ex: $|x| > m$ $x > m$ or $x < -m$

$< \leq$
less th"AND" - *shade only the intersection* Ex: $|x| < m$ $x < m$ and $x > -m$

Graph the following absolute value inequalities. ~~$-2 \geq x \geq 2$~~



$-3 < x < 3$
*Write "AND" as one piece



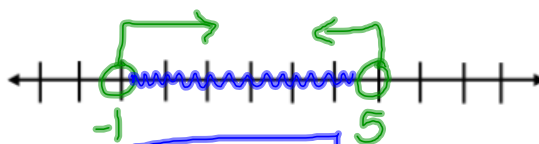
"OR" → wings

Example 7

Solve and graph $|x - 2| < 3$

$$\begin{array}{l} x-2 < 3 \\ +2 \quad +2 \\ \hline x < 5 \end{array} \quad \begin{array}{l} x-2 > -3 \\ +2 \quad +2 \\ \hline x > -1 \end{array}$$

$x < 5$ and $x > -1$



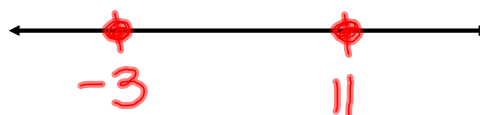
$-1 < x < 5$

Example 8

Solve and graph $|x - 4| = 7$

$$\begin{array}{l} x-4 = 7 \\ +4 \quad +4 \\ \hline x = 11 \end{array} \quad \begin{array}{l} x-4 = -7 \\ +4 \quad +4 \\ \hline x = -3 \end{array}$$

$x = 11$ $x = -3$



* closed circle for =
* Equation → NO shading

Pg 98
1-23

All
but evens

