

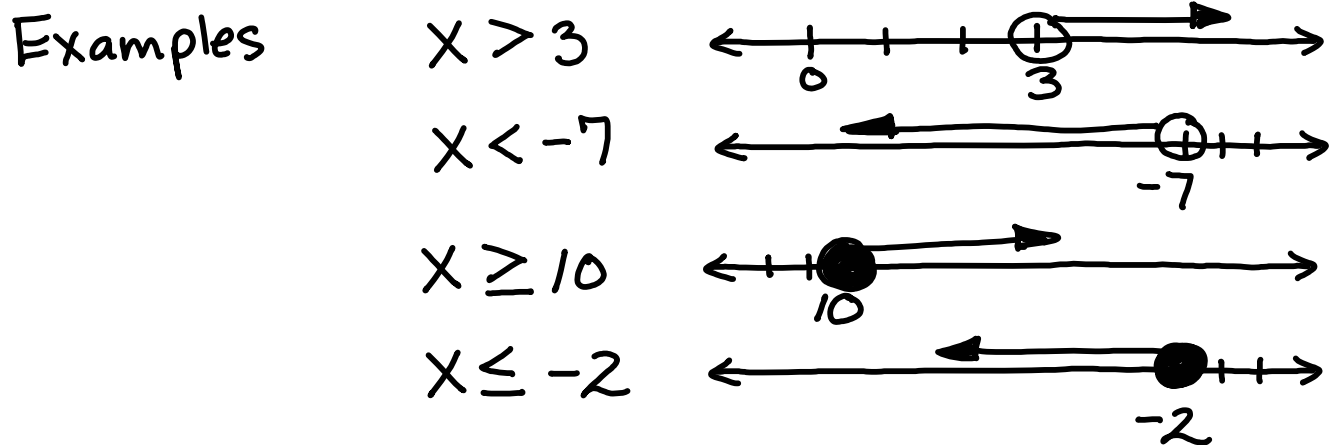
Inequalities

Chapter Review



 Sketch the graph of the inequalities

$<$ or $>$ use open circle
 \leq or \geq use closed circle



 Determine if the number is a solution to the inequality

Replace the variable(s) with values - determine if the resulting statement is true or false.

True = value is solution

False = value is NOT solution

Example, Is $x = -6$ a solution to $2x - 1 \leq 9$?

$$2(-6) - 1 \leq 9$$

$$-8 - 1$$

$$-9 \leq -9$$

True, $x = -6$
is a solution



Solve the inequality and graph the solution

- Use same steps as if you were solving an equation
- If you divide both sides of the inequality by a negative number - reverse the inequality sign
- Graph the simplified inequality

Example

Solve and graph the solution $-2(4x+1) < 10$

$$\begin{array}{r} -2(4x+1) < 10 \\ -8x - 2 < 10 \\ \hline + 2 \phantom{ <} + 2 \end{array}$$

$$\frac{-8x}{-8} < \frac{12}{-8}$$

$$x > -\frac{12}{8}$$

Graph $\rightarrow x > -\frac{3}{2}$

(inequality sign reversed - divided both sides by negative number)

