



$| | > \text{OR}$
 $| | < \text{AND}$

\cup
 \cap

1.7 Linear and Absolute Value Inequalities

$$|x+2| - 4 = 3$$

$$|x+2| = 7$$

$$x+2 = 7$$

$$x = 5$$

$$x+2 = -7$$

$$x = -9$$

$$(-\infty, -9) \cup (5, \infty)$$

OR

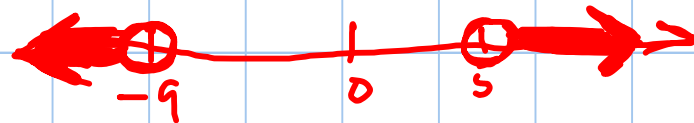
$$|x+2| - 4 > 3$$

$$|x+2| > 7$$

$$x+2 > 7 \text{ OR } x+2 < -7$$

$$x > 5 \text{ OR } x < -9$$

\cup





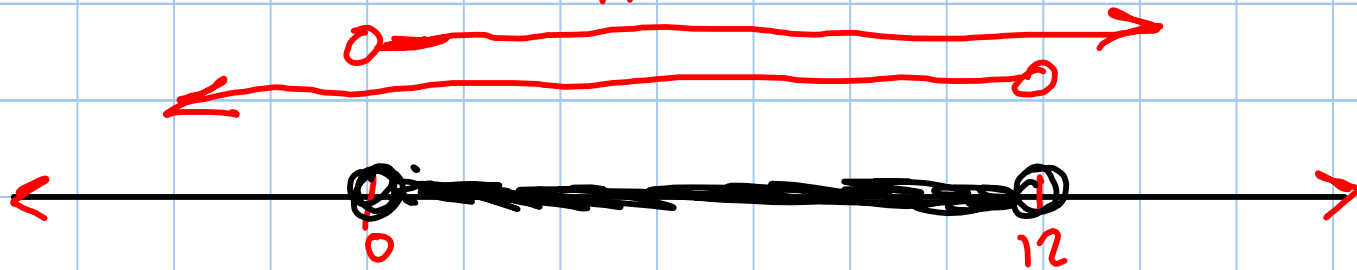
|| > AND ∩

#59. $3|x-2| + 6 > 9$

#52. $|6-x| < 6$

interval notation
(0, 12)

$$\begin{array}{l}
 6-x < 6 \quad \text{AND} \quad 6-x > -6 \\
 \cap \\
 -x < 0 \quad \text{AND} \quad -x > -12 \\
 \cap \\
 x > 0 \quad \text{AND} \quad x < 12 \\
 \cap
 \end{array}$$





#50. $|4x-3| \leq 5$

$$4x-3 \leq 5 \quad \text{AND} \quad 4x-3 \geq -5$$

$$4x \leq 8$$

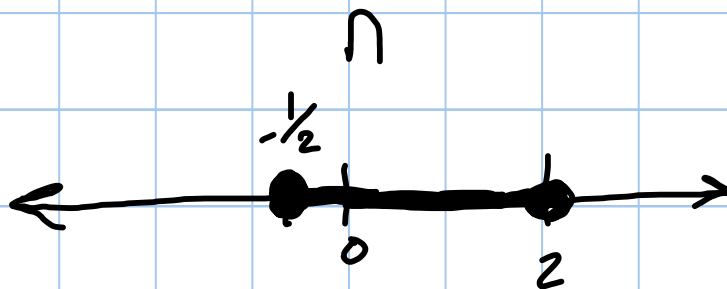
$$4x \geq -2$$

$$x \leq 2$$

AND

$$x \geq -\frac{1}{2}$$

$$\left[-\frac{1}{2}, 2\right]$$





$$(-\infty, 12)$$
$$x < 12$$

$$[-10, -8]$$

$$|x+9| \leq 1$$

$$x+9 \leq 1$$

$$x+9 \geq -1$$

$$x \leq -8 \quad \text{AND} \quad x \geq -10$$



$$16. \quad \frac{5-x}{3} \leq -2$$

$$5-x \leq -6$$

$$-x \leq -11$$

$$x \geq 11$$