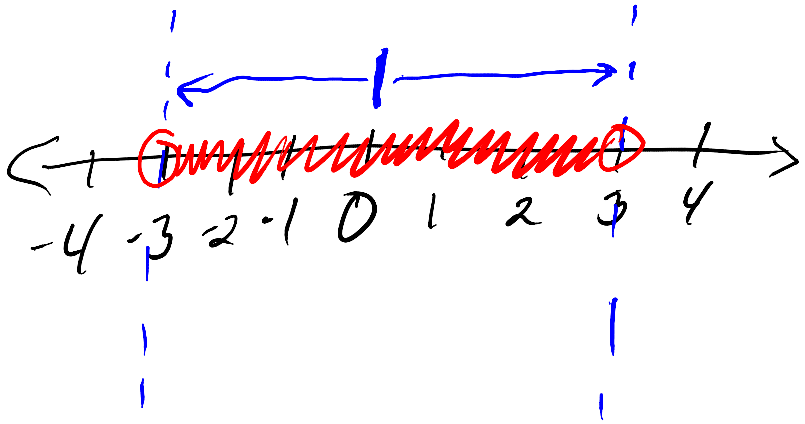
Absolute Value Inequalities

① Less Thans ($<$, $\leq$)

$$|x| < 3$$

"Distance btwn x and 0 is less than 3"

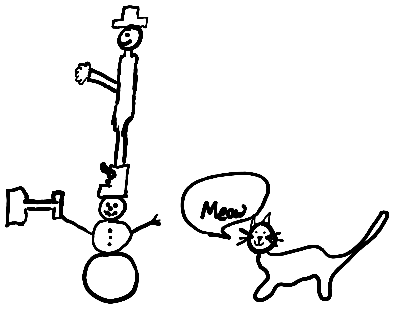


$x > -3$ AND $x < 3$

$$-3 < x < 3$$

Case 1: The expression inside the bars is positive or zero.

Case 2: The expression inside the bars is negative



① $|3x+6| \geq 12$

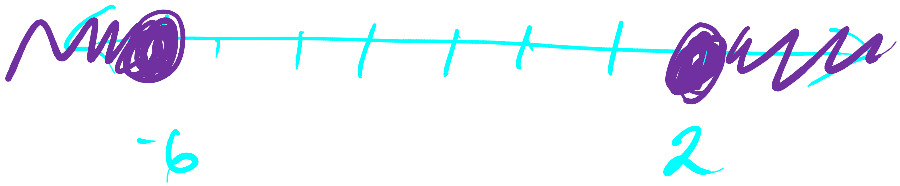
OR

ⓐ $3x+6 \geq 12$ $\quad$ ⓑ $3x+6 \leq -12$

$-6 \quad -6$ $\quad$ $-6 \quad -6$

$3x \geq 6$ $\quad$ $3x \leq -18$

$x \geq 2$ or $x \leq -6$



② $|x-6| \geq -5$

All Real Numbers

③ $|x+24| < 0$

No Solution

④ $|x+1| \leq 0$

$x+1 = 0$

$x = -1$