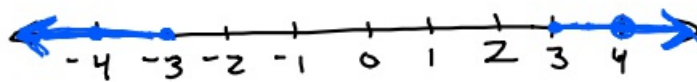


1-13-20 3rd Trig

$$|x| \geq 3$$



$$|x| \leq 2$$



① $|x-3| > 5$

$$\begin{array}{l} x-3 > 5 \\ \hline +3 \quad +3 \\ \hline x > 8 \end{array} \quad \text{OR} \quad \begin{array}{l} \cancel{-}(x-3) > \cancel{-}5 \\ \hline -1 \quad -1 \\ \hline x-3 < -5 \\ \hline +3 \quad +3 \\ \hline x < -2 \end{array}$$

$x > 8$ OR $x < -2$



② $|x+7| \leq 10$

$$\begin{array}{l} x+7 \leq 10 \\ \hline -7 \quad -7 \\ \hline x \leq 3 \end{array} \quad \text{AND} \quad \begin{array}{l} \cancel{-}(x+7) \leq \cancel{-}10 \\ \hline -1 \quad -1 \\ \hline x+7 \geq -10 \\ \hline -7 \quad -7 \\ \hline x \geq -17 \end{array}$$

$x \leq 3$ AND $x \geq -17$



$-17 \leq x \leq 3$

$$\textcircled{3} \quad |2x+1| \geq 9$$

$$\begin{array}{r} 2x+1 \geq 9 \\ -1 \quad -1 \\ \hline 2x \geq 8 \\ x \geq 4 \end{array} \quad \text{OR}$$

$$\frac{\cancel{-(2x+1)} \geq 9}{-1 \quad -1}$$

$$\begin{array}{r} 2x+1 \leq -9 \\ -1 \quad -1 \\ \hline 2x \leq -10 \\ x \leq -5 \end{array}$$

$$\begin{array}{r} 2x+1 \leq -9 \\ -1 \quad -1 \\ \hline 2x \leq -10 \\ x \leq -5 \end{array}$$

$$x \leq -5$$

$$x \leq -5$$

$$\boxed{x \geq 4 \text{ OR } x \leq -5}$$

Special Cases

$$\textcircled{4} \quad |x+3| > -10$$

↓

+ answer > -10

Always true

\mathbb{R}

$$\textcircled{5} \quad |x+3| < -4$$

↓

+ answer < -4

Never happens

No solution

\emptyset null set