

Solving Absolute Value Inequalities

$$|v-3| \geq 4$$

Solve and Graph solutions on a Number line

Write $|v-3| \geq 4$ as two inequalities joined by or

Reverse
the
inequality
and use
the (-)

$$\begin{array}{l} v-3 \leq -4 \\ \underline{+3} \quad \underline{+3} \\ v \leq -1 \end{array}$$

$$\begin{array}{l} \text{or} \quad v-3 \geq 4 \\ \underline{+3} \quad \underline{+3} \\ v \geq 7 \end{array}$$



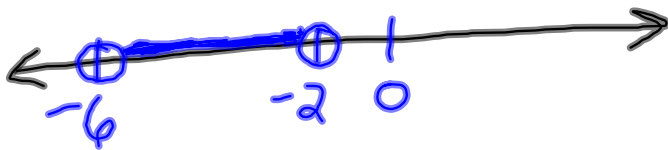
try $|s+4| < 2$

$$s+4 > -2$$
$$\underline{-4} \quad \underline{-4}$$

$$s > -6$$

$$s+4 < 2$$
$$\underline{-4} \quad \underline{-4}$$

$$s < -2$$



$$\text{try } |3c-6| \geq 3$$

$$3c-6 \leq -3$$

$$\begin{array}{r} +6 \\ \hline \end{array} \quad \begin{array}{r} +6 \\ \hline \end{array}$$

$$\frac{3c}{3} \leq \frac{3}{3}$$

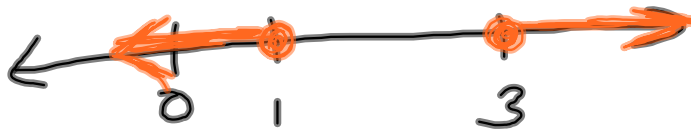
$$c \leq 1$$

$$3c-6 \geq 3$$

$$\begin{array}{r} +6 \\ \hline \end{array} \quad \begin{array}{r} +6 \\ \hline \end{array}$$

$$\frac{3c}{3} \geq \frac{9}{3}$$

$$c \geq 3$$



Ex 3 $|2N + 3| \leq 5$

$$2N + 3 \geq -5$$
$$\underline{-3} \quad \underline{-3}$$

$$\underline{2N} \geq \underline{-8}$$
$$\underline{2} \quad \underline{2}$$

$$N \geq -4$$

$$2N + 3 \leq 5$$
$$\underline{-3} \quad \underline{-3}$$

$$\underline{2N} \leq \underline{2}$$
$$\underline{2} \quad \underline{2}$$

$$N \leq 1$$



$$\textcircled{\text{Ex 4}} \quad 5 > |v+2| + 3$$

$$\underline{-3} \qquad \underline{-3}$$

$$2 > |v+2|$$

$$-2 < v+2$$

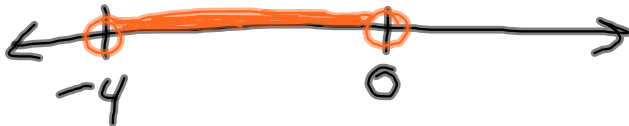
$$\underline{-2} \quad \underline{-2}$$

$$-4 < v$$

$$2 > v+2$$

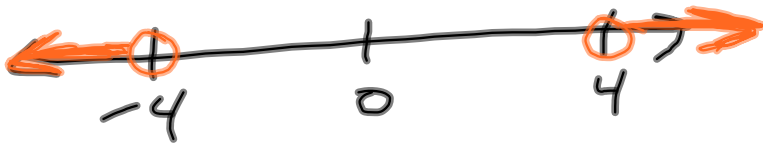
$$\underline{-2} \quad \underline{-2}$$

$$0 > v$$



(Ex5) $|2k| > 8$

$$\begin{array}{l|l} 2k < -8 & 2k > 8 \\ \hline \frac{2k}{2} < \frac{-8}{2} & \frac{2k}{2} > \frac{8}{2} \\ k < -4 & k > 4 \end{array}$$



Ex6

$$|4y+11| < 7$$

$$4y+11 > -7$$
$$\underline{-11} \quad \underline{-11}$$

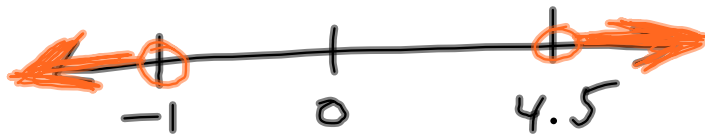
$$4y > -18$$
$$\underline{4} \quad \underline{4}$$

$$y > 4.5$$

$$4y+11 < 7$$
$$\underline{-11} \quad \underline{-11}$$

$$4y < -4$$
$$\underline{4} \quad \underline{4}$$

$$y < -1$$



(EX7) $|J| - 2 \geq 6$
+2 +2

$$|J| \geq 8$$

$$J \leq -8$$

$$J \geq 8$$

