

4.2 Solving Inequalities using addition and subtraction

EQ: How can you use addition or subtraction to solve an inequality?

Addition & Subtraction property of inequality
 * When you add or subtract the same number to both sides, the inequality remains true.

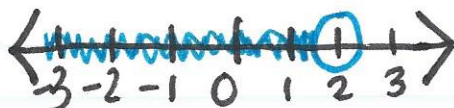
$$\begin{array}{r} -4 < 3 \\ +2 \quad +2 \\ \hline -2 < 5 \quad \checkmark \end{array}$$

$$\begin{array}{r} 5 > 2 \\ -2 \quad -2 \\ \hline 3 > 0 \quad \checkmark \end{array}$$

Example 1: Solve and graph.

* line for balance
 * ASK the "3Qs"

- ① x
- ② -5
- ③ $+5$



$$\begin{array}{r} x - 5 < -3 \\ +5 \quad +5 \\ \hline x < 2 \end{array}$$

↑ open circle

* Our goal is to isolate the variable

Example 2: Solve and graph.

- ① x
- ② $+14$
- ③ -14



$$\begin{array}{r} 13 \leq x + 14 \\ -14 \quad -14 \\ \hline -1 \leq x \\ x \geq -1 \end{array}$$

↑ closed circle

} same thing!