

## Chapter 4-8 Solving for Inequalities

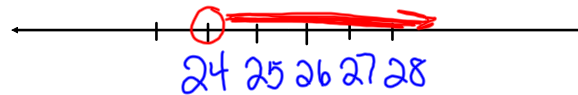
Objective: SWBAT solve inequalities by either adding or subtracting.

### Addition Property of Inequality

You can add the same value to both sides of an inequality.

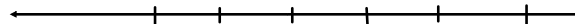
Solve  $n - 10 > 14$ , Graph the solution

$$\begin{array}{r} \text{Solve} \\ n - 10 > 14 \\ + \quad \cancel{10} \quad + \quad \cancel{10} \\ \hline n > 24 \end{array}$$



Solve  $y - 3 < 4$ , Graph the solution


$$\begin{array}{r} y - 3 < 4 \\ -3 \quad +3 \\ \hline y < 7 \end{array}$$



The Subtraction Property of Inequality.

You can subtract the same value from both side of the inequality.

Solve  $y + 7 > 12$ , Graph the solution

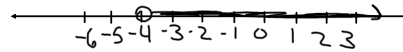
$$\begin{array}{r} -7 \quad -7 \\ \hline y + 7 > 12 \\ y > 5 \end{array}$$


A number line with a red circle at 5 and a red arrow pointing to the right, representing the solution  $y > 5$ .

Solve each inequality. The graph the solution

1.)  $x + 9 > 5$

$$\begin{array}{r} -9 \quad -9 \\ \hline x + 9 > 5 \\ x > -4 \end{array}$$



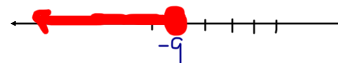
2.)  $y + 3 < 4$

$$\begin{array}{r} -3 \quad -3 \\ \hline y + 3 < 4 \\ y < 1 \end{array}$$



$w + 4 < -5$

$$\begin{array}{r} -4 \quad -4 \\ \hline w + 4 < -5 \\ w < -9 \end{array}$$



A school bus can safely carry as many as 76 students. If 19 students are already on the bus, how many more can board the bus?