

"I Can Solve an Inequality for a Variable and Graph the Solution Set on a Number Line."

Solving Inequalities

Is the given value a solution to the inequality?

2 Methods:

Substitution

$$x - 6 \geq 8 \quad x = 10?$$

Using Inverse Operations

$$x - 6 \geq 8 \quad x = 20?$$

Solve the Following Inequalities and Determine Which Values are In the Solution Set

$$x + 5 \leq 8$$

$$\frac{p}{4} > 7$$

$$3 < c - 9$$

$$4x + 8x \geq 36$$

$$1 \leq 12 + x - 20$$

$$7x - 5 > 2$$

Can $x = \{2, 4, 15, 27, 32, 45\}$

1. $x + 5x - 3x \geq 19 - 7$

2. $3x + 5 - 2x - 8 < 16 + 8$

"I Can Solve an Inequality for a Variable and Graph the Solution Set on a Number Line."

Solving Inequalities

the given value a solution to the inequality?

Methods:

Substitution	Using Inverse Operations
$x - 6 \geq 8$ $x = 10?$ $10 - 6 \geq 8$ $4 \geq 8$	$x - 6 \geq 8$ $x = 20?$ $x \geq 14$ $20 \geq 14 \checkmark$
NO!	YES!

Solve the Following Inequalities and Determine Which Values are In the Solution Set

$$x + 5 \leq 8$$

$$\begin{array}{r|l} -5 & -5 \\ \hline x & \leq 3 \end{array}$$

$$\frac{p}{4} > 7$$

$$\begin{array}{r|l} \cdot 4 & \cdot 4 \\ \hline p & > 28 \end{array}$$

$$3 < c - 9$$

$$\begin{array}{r|l} +9 & +9 \\ \hline 12 & < c \end{array}$$

$$4x + 8x \geq 36$$

$$\begin{array}{r|l} 12x & \geq 36 \\ \div 12 & \div 12 \\ \hline x & \geq 3 \end{array}$$

$$1 \leq 12 + x - 20$$

$$\begin{array}{r|l} -12 & -12 \\ \hline -11 & \leq x - 20 \\ +20 & +20 \\ \hline 9 & \leq x \end{array}$$

$$7x - 5 > 2$$

$$\begin{array}{r|l} +5 & +5 \\ \hline 7x & > 7 \\ \div 7 & \div 7 \\ \hline x & > 1 \end{array}$$

Can $x = \{2, 4, 15, 27, 32, 45\}$

1. $x + 5x - 3x \geq 19 - 7$ $3x \geq 12$ $\div 3$ $\div 3$ $x \geq 4$	2. $3x + 5 - 2x - 8 < 16 + 8$ $3x - 2x + 5 - 8 < 24$ $x - 3 < 24$ $+3$ $+3$ $x < 27$
$x = \{4, 15, 27, 32, 45\}$	$x = \{2, 4, 15\}$