"I Understand that Solving an Inequality means to find the Set of Values that make it true."

From Equations to Inequalities

An **inequality** is a mathematical sentence that compares quantities. An inequality like $x < 5$ or $x \geq 7$ can be written to express how a variable compares to another number.

<	>	≤	≥

Equations	Inequalities
$\square = 8$	$\square < 8$
$\square + 2 = 5$	$\square + 2 > 5$

Key Concept:

Equations have _____ solution.

Inequalities can have _____ solutions.

Write the Inequality and Determine the Solutions that make the Inequality True and False

1. x is greater than 15	True: { } False: { }
2. x is greater than or equal to 15	True: { } False: { }
3. x is less than 6	True: { } False: { }
4. x is less than or equal to 6	True: { } False: { }

Which of the following values are a part of the solution set for each inequality.

{0, 3, 5, 8, 10, 14}

$x > 4$	$x \leq 10$	$5 > x$
$12 \leq x$	$x \geq 15$	$x > -1$
$x + 4 < 9$	$2x \geq 14$	$f - 4 > 2$

"I Understand that Solving an Inequality means to find the Set of Values that make it true."

From Equations to Inequalities

An **inequality** is a mathematical sentence that compares quantities. An inequality like $x < 5$ or $x \geq 7$ can be written to express how a variable compares to another number.

$<$	$>$	$\leq$	$\geq$
less than	greater than	less than or equal to	greater than or equal to
$6 < 10$	$12 > 4$	$5 \leq 13$	$10 \geq 7$
$6 \not< 6$	$12 \not> 12$	$5 \leq 5$	$10 \not\geq 10$

Equations	Inequalities
$\boxed{8} = 8$	$\square < 8$
	$\square$: 7, -10, 0, 4, -12, -100, 6, 1, $4\frac{1}{2}$ ...
$\boxed{3} + 2 = 5$	$\square + 2 > 5$
	$\square$ = 7, 12, 144, 6, 9, 100, 55 ...

Key Concept:

Equations have ONE solution.

Inequalities can have MANY solutions.

Write the Inequality and Determine the Solutions that make the Inequality True and False

1. x is greater than 15 $x > 15$	True: { 20, 16, 25, 37, 22 } False: { 14, 13, 0, 1, 15 }
2. x is greater than or equal to 15 $x \geq 15$	True: { 15, 17, 19, 20, 100 } False: { 0, -5, 4, 11, 14 }
3. x is less than 6 $x < 6$	True: { 0, 1, 2, 3, 4, 5 } False: { 6, 7, 8, 9, 10 }
4. x is less than or equal to 6 $x \leq 6$	True: { 6, 0, -5, -10, -15 } False: { 9, 12, 15, 16, 20 }

Which of the following values are a part of the solution set for each inequality.

{0, 3, 5, 8, 10, 14}

$x > 4$ {5, 8, 10, 14}	$x \leq 10$ {0, 3, 5, 8, 10}	$5 > x$ {0, 3}
$12 \leq x$ {14}	$x \geq 15$ { }	$x > -1$ {0, 3, 5, 8, 10, 14}
$x + 4 < 9$ $x < 5$ {0, 3}	$2x \geq 14$ $x \geq 7$ {8, 10, 14}	$f - 4 > 2$ $f > 6$ {8, 10, 14}