

Common Core Standard

6.EE.8 Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities in the form of $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams.

6.EE.5 Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.

Students Will Be Able To...

Identify similarities and differences between expressions, equations, and inequalities.

Explain if a value is a part of a solution set dealing with inequalities

$x > 0.25$ Inequalities???

$>$, $<$

$\frac{3}{4} > 0.25$

$x < 62$ Intro $x > 21$

The Karman Line is the point at which the Earth's atmosphere ends and outer space end. Any point past that line would be considered outer space. Let the variable $c=62$, which is the number of miles the Karman Line is from sea level. Let x represent the distance you are from sea level. Write an inequality in terms of x and c of the distances from sea level that are in the Earth's atmosphere.



Google's Definition of INEQUALITY

Math Term Definition.

Inequality. An **inequality** is like an equation that uses symbols for "less than" ($<$) and "greater than" ($>$) where an equation uses a symbol for "is equal to" ($=$).

Inequality Symbols

$x < 1$	$x > 1$	$x \leq 1$	$x \geq 1$	$x = 1$
x is LESS THAN 1	x is GREATER THAN 1	x is LESS THAN OR EQUAL TO 1	x is GREATER THAN OR EQUAL TO 1	x is EQUAL TO 1
$1 > x$	$1 < x$	$1 \geq x$	$1 \leq x$	$1 = x$
1 is greater than x	1 is _____ _____ x	_____ is GREATER THAN OR EQUAL TO _____	1 is _____ _____ x	1 is EQUAL TO x

Try These!

- $4.5 \geq x$ is written as:

- $y \leq \frac{1}{2}$ is written as:

- $x = 9$ is written as:

Is a value a part of a Solution Set?

Steps to Determine if a Value is part of a Solution Set (makes the statement true)

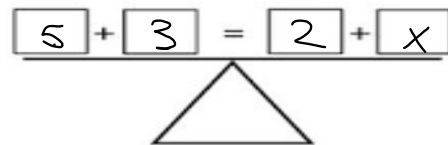
1. Read the inequality and put it into your own words.
2. Substitute the given value and evaluate.
3. Decide if the value makes the inequality TRUE.

$$x \geq 3.75 \text{ when } x = 3.8$$

Balancing the Scales

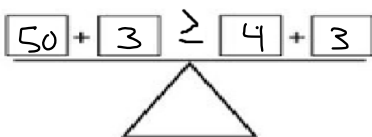
When we think about balancing a scale with equations we want the scale to be balanced on both sides.

Balance the Scale



Balancing the Scales

When dealing with Inequalities will the scale be balanced??



$$5x + 3y + 4$$

$$5x + 3y = 4$$

$$5x + 3y \geq 4$$