Absolute Value

Absolute Value bars look like | |. What do the absolute value bars do?

An example with absolute value bars:

$|−33| = ____$

The Order of Operations

This is the order that is used to evaluate algebraic expressions:

1)

2)

3)

4)

Here is an example of how to use the Order of Operations:

$|−4| + 5^2 + [(−8 − 4) + (20 − 9)]$

Also important to remember: What happens when you distribute or multiply by a negative sign?

_____________________________________________

An example of how negative signs work:

$2^2 − 4(3 − 6)$
Evaluating an Algebraic Expression

When given an algebraic expression and values for the variables, you are supposed to ______________ the values into the expression and simplify.

Examples:

\[ 3x + 5y \text{ for } x=2 \text{ and } y=-3 \]

\[ xy - t \text{ for } x=-6, y=3, \text{ and } t=4 \]

Simplifying an Algebraic Expression by Combining Like Terms

Examples of combining like terms:

\[ c^4 + 5c^4 = \] ____________

\[ -x^2 - 9x^2 = \] ____________

Can you combine \( x^4 \) and \( x^3 \)? How about \( x^4 \) and \( y^4 \)? Why or why not?

We will use what we know about combining like terms and the Order of Operations to simplify the following expressions:

\[ -4(x - 3) + 20x \]

\[ 4(3x - 2) - 3(x - 7) \]
**Solving Linear Equations**

Your #1 goal when you are solving linear equations is to ______________________________.

One of the most important rules in solving equations: what you do to one side of the equation, you MUST do to the other side!

Examples:

\[ x + 5 = 7 \]

\[ 9x - 5x = 3x - 23 \]

\[ \frac{5}{8} + k = \frac{1}{4} \]

**Solving Linear Inequalities**

Solving linear inequalities is done mostly the same as solving linear equations, with one important difference:

What do you have to do when you multiply or divide by a negative number in an inequality?

Examples (write your solution algebraically and graphically on the number line):

\[ 5 - x \leq 3 \]

\[ 7x - 8 \leq 8x + 9 \]
4(3x - 2) > 2(5x - 3)

Plotting Points in the Cartesian Coordinate System

The xy plane that is used to graph points, lines, and curves is called the ____________________.

The plane is broken into four parts, called _____________________. On the coordinate plane below, label these four parts, as well as the axes. Mark each axis from -10 to 10.

Each coordinate is written as (___,____). The point (0,0) is called the _________________.

Plot the following points: (4, -3), (0,0), (0,-6), (7, 0), (-2,-2)

The vertical axis is the ____ axis.

____

The horizontal axis is the ____ axis.

____