Station #s 1-5

To order numbers from **least to greatest**,

1. Get the decimal equivalent (equal).
2. Compare digits in corresponding place values, from left to right

Perfect Squares: A = s · s

1 4 9 16 25 36 49 64 81 100

1·1, 2·2, 3·3, 4·4, 5·5, 6·6, 7·7, 8·8, 9·9, 10·10

Symbols

= Means "equals"

> Means "greater than"

< Means "less than"

≥ "greater OR equal"

≤ "less than OR equal"

} one or the other, does not need to be both

BIGGER > SMALLER

SMALLER < BIGGER

The symbol Opens to the bigger and

Closes to the smaller

5 < x < 7 means x is bigger than 5 and both 5 and x are less than 7.

X is between 5 and 7

5 > x > 7 Is NON SENSE. 5 is greater than x and both 5 and x are greater than 7. I think not!

x < 5 or x > 7 means x can be numbers less than 5 or greater than 7, but not both at the same time.

\+ Sum, add, more than

\- Difference, subtract, less than

x Product, multiply, times, factor, twice, of, per

÷ Quotient, divide, parted, fractions, halved

Station #s 6-10

Properties of **Equality** for

Addition: if a = b , then a + **c** = b + **c**

Subtraction: if a = b , then a - **c** = b - **c**

Multiplication: if a = b , then a**c** = b**c**

Division: if a = b , then a ÷ **c** = b ÷ **c**

what you do to one side you have to do to the other to be fair and remain equal.

Distributive Property: a(b + c) = ab + ac

Inverse Property of

Addition: a + **-a = 0** 3 + 2x **- 3** => **0** + 2x

subtraction cancels addition

Multiplication: $a \bullet \frac{\mathbf{1}}{\mathbf{a}} = \mathbf{1}$ ex. $\frac{\mathbf{7}}{\mathbf{3}}(\frac{3}{7}x) \Rightarrow \mathbf{1}x$

division cancels multiplication

Identity Property of

Multiplication: $a \bullet 1 = a$ ex. $3(\frac{7}{7}) \Rightarrow 3$

Addition: a + 0 = a ex. 3 + 7 - 7 => 3

What you do to get itself, won't change the value

Commutative Property

a + b **+ c** = a **+ c** + b ex. 3 - 4 + 7 = 3 + 7 + -4 = 6

ab**c** = a**c**b ex. 3(-4)(7) = 3(7)(-4) = -84

You **can change the order** of things if all **added or multiplied**

Associative Property

(a + b) + c = a + **(c + b)** ex. (3 - 4) + 7 = 3 + (-4 + 7) = 6

(ab)c = a**(cb)** ex. $(3 \bullet -4)\ 7 = 3(-4 \bullet 7) = -84$

You **can change the grouping** of things if numbers are **all added or all multiplied**

Station #s 14 &17

Fractions:

To ADD: You can only add things with he same name.

Option 1: turn both into improper fractions and get a common denominator by multiplying by the smallest common multiple (LCM). Add the numerators only. Convert into mixed numbers.

Option 2: Turn into mixed fractions and add the whole parts together. Then get a common denominator between the fractions. Add the numerators together, and convert into a mixed number if applicable and add the whole number part with the whole parts at the beginning.

To MULTIPLY: Multiply numerators together and denominators together.

(Note: if a denominator and a numerator are the same, they cancel)

Station #s 11-15

When you are given a statement, expression, equation, or inequality and told what the variables equal, **SUBSTITUTE and SIMPLIFY**

Absolute Value is the distance a number is from 0. It is the value of the number without the sign, default positive

$|x|$

$|5| = 5$ ...5 is 5 away from 0

$|-5| = 5$ ...-5 is 5 away from 0

When simplifying an expression, you must simplify order of operations inside the | | bars first, then you can take the absolute value of the single resulting number.

Order of Operations

P Parenthesis, Division bar, Absolute value bars start PEMDAS over within first, then move out

E Exponents

MD Multiplication and Division, Left to Right

AS Addition and Subtraction, Left to Right

Station #s 18,19

Solve Inequalities the same way you solve equations by getting the variable alone.

Undo the + or - first

Undo the x or / second

In general: Undo the Order of Operations

THE CATCH! You must **flip the sign if you multiply or divide by a negative number**

To Graph: Shade solutions/direction on the number line

> or < **Open Point** on number line to express the initial value compared to is not a solution

≥ or ≤ **Closed Point** on number line to express the initial value compared to is a solution