

Absolute Value

Definition: Absolute Value
is the distance from zero.

The notation is $| \# 's \textit{ inside} |$
(straight line parentheses)

EXAMPLES:

$$a. \quad |-7| = 7$$

$$b. \quad |-5| - 2 = 3$$

$$c. \quad |8 + 7| = 15$$

Distributive Property

In Distributive Property we take the number/variable on the outside of the parentheses and **MULTIPLY** it by ALL the terms inside the parentheses.

EXAMPLES:

$$a. \quad 5(x + 2)$$

$$5x + 10$$

$$b. \quad -6(g + 2h)$$

$$-6g - 12h$$

$$c. \quad 4(8r - 5) - 32$$

$$32r - 52$$

EQUATION

Definition: An equation is a mathematical sentence that contains an equal sign stating that two quantities are equal.

EXAMPLES:

a. $5(2m - 3) = 15$

b. $\frac{x}{4} + 3 = 12$

c. $\frac{m - 5}{10} = 20$

EXPONENTS

Definition: A small number that sits above a regular sized number. It tells you how many times to multiply that number.

Ex: In 7^4 ; 4 is the exponent

EXAMPLES:

$$a. \quad 3^4 = 3 \bullet 3 \bullet 3 \bullet 3$$

$$b. \quad 2^3 = 2 \bullet 2 \bullet 2$$

$$c. \quad (-5)^2 = (-5) \bullet (-5)$$

EXPRESSION

Definition: Numbers,
symbols and operations
grouped together without
an equal sign.

EXAMPLES:

a. $4x + 9$

b. $2(6m - 7)$

c. $3m + 2 - 5h + 6y$

If we are told what the variable is equal to we can evaluate an expression.

For example:

$$7x + 10 \text{ when } x = 2$$

So we replace x with 2

$$7(2) + 10 = 24$$

FACTORING

To factor we find the Greatest Common Factor (GCF) then we divide each number in the expression by the GCF.

EXAMPLES:

a. $12m - 3$

$GCF = 3$ so $3(4m - 1)$ is the factored expression

b. $11y + 23$

$GCF = 1$ so $11y + 23$ cannot be factored

c. $6x - 14xy$

$GCF = 2x$ so $2x(3 - 7y)$ is the factored expression

GREATEST
COMMON
FACTOR
(G.C.F)

The G.C.F. is the biggest number that divides into each term.

The G.C.F. can also be a common variable as long as it shows up in each term.

EXAMPLES:

a. $14h + 7$

$$GCF = 7$$

b. $10m + 5n + 20mn$

$$GCF = 5$$

c. $9y + 12yx$

$$GCF = 3y$$

INTEGER

Definition: An integer is a positive or negative whole number.

EXAMPLES:

Integers

-2

876502

-156

3

10

-8842

NOT Integers

3.8

$-48\frac{1}{2}$

$\sqrt{56}$

π

-999.90

$5.\bar{6}$

INVERSE OPERATIONS

Definition: Inverse operations are operations that undo what has been done.

These operations are what we use to solve equations.

EXAMPLES:

a. $14h + 7 = 35$

b. $\frac{x}{3} - 2 = 6$

LIKE TERMS

Definition: Terms that contain the same variable(s).

Also, if the terms are only numbers (constants) without a variable they are considered to be like terms.

EXAMPLES:

a. $5y + 3m$

No like terms

b. $6 + 4h + 2$

Like terms are 6 and 2. They are both constants.

c. $7w + 3w + 5n$

Like terms are $7w$ and $3w$

because they both have the same variable.

ORDER OF OPERATIONS

Definition: The rules to follow when simplifying an expression.

1. Parentheses
2. Exponents
3. Multiplication/Division (left to right)
4. Addition/Subtraction (left to right)

EXAMPLE:

Simplify the Expressions using the Order of Operations

$$27 - 25 \div 5 \bullet 3 + 9$$

Parenthesis

Exponents

$$27 - 5 \bullet 3 + 9$$

Multiplication/Division

Addition/Subtraction

$$27 - 15 + 9$$

$$12 + 9 = 21$$

*** Move left to right***

RATIONAL NUMBERS

Definition: The set of numbers that can be written in the form $\frac{a}{b}$, where a and b are integers and $b \neq 0$.

EXAMPLES:

Rational Numbers

-2

$\frac{1}{4}$

-9.765

Irrational Numbers

$\sqrt{8}$

$\frac{4.6}{187}$

π

REPEATING
DECIMAL

Definition: A decimal that has a set pattern that repeats.

EXAMPLES:

Repeating

$$-2.\bar{3}$$

$$\frac{1}{6}$$

$$0.555\dots$$

NOT Repeating

$$0.333$$

$$0.456458$$

$$\frac{1}{5}$$

TERMINATING
DECIMAL

Definition: A decimal that ends/
stops. It does NOT continue and it
does NOT repeat.

EXAMPLES:

Terminating

$$\frac{3}{8}$$

0.583

0.4

NOT Terminating

$$0.\bar{7}$$

9.999.....

$$\frac{1}{3}$$

Variable

Definition: A letter in a math problem.

EXAMPLES:

a. $9h + 4$

The variable is h

b. $2m + 7n + 9mn$

The variables are m and n

c. $5yz + 17yx$

The variables are x , y and z