Vocabulary
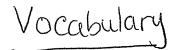
absolute value

the distance the number is from zero on a number line; always positive

acute triangle

a triangle having three acute angles

addend

number to be added to another number

Additive Identity Property of Zero

adding zero to a number leaves it unchanged; $A + 0 = A$

additive inverse

the opposite of an integer; The sum of an integer and its additive inverse is always zero.

algebraic expression

a combination of variables, numbers, and at least one operation

algorithm

a set of rules for solving a problem

area

the number of square units needed to cover a surface enclosed by a geometric figure; recorded in square units; u^2

Associative Property of Addition

the way in which three or more numbers are grouped when they are added does not change the sum; a + (b + c) = (a + b) + c

Associative Property of Multiplication

the way in which three or more numbers are grouped when they are multiplied does not change the product; (a x b) x c = a x (b x c)

attribute

a characteristic of an object such as color, shape, or size

axis

a reference line from which distances or angles are measured on a coordinate grid; plural-axes

B

base

in a power, the number used as a factor. In 10^3, the base is 10.

in geometry, the base of a parallelogram or triangle is any side of the figure. The bases of a trapezoid are the parallel sides.

in the percent proportion, the whole quantity,or the number to which the part is being compared.

box plot

a diagram that summarizes data using median, the upper and lower quartiles and the extreme values. A box is drawn around the quartile values and whiskers extend from each quartile to the extreme data points; also referred to as a box and whisker plot.

cluster

data that are grouped closely together

coefficient

the numerical factor of a term that contains a variable; the number directly in front of the variable

common denominator

a common multiple of the denominators for two or more fractions

common factor

a factor that two or more numbers share

common multiple

a multiple that two or more numbers share

Commutative Property of Addition

the order in which two numbers are added does not change their sum; $a + b = b + a$

Commutative Property of Multiplication

the order in which two numbers are multiplied does not change their product; $a \times b = b \times a$

compose

to add shapes outside an existing shape

constant

a term that does not contain a variable

coordinate grid

See **coordinate plane**

coordinate pair

a pair of numbers used to locate a point in the coordinate plane; written in the form (x-coordinate, y-coordinate); also called ordered pair or coordinates

coordinate plane

a plane in which a horizontal number line and a vertical number line intersect at their zero points; also called a coordinate grid

coordinates

See **ordered pair or coordinate pair**

cube

in algebra, the third power of a number, $2^3 n = 2 \times 2 \times 2$

in geometry, a solid figure that has 6 square faces

D

data

pieces of information, often numerical, which are gathered for statistical purposes

decompose

to break an existing share into smaller, more common shapes

denominator

the bottom number in a fraction, it represents the total number of equal parts

dependent variable

a variable that depends on specific facts or information

diagram

a drawing used to illustrate mathematical relationships

difference

the amount that remains after subtracting

Distributive Property

the multiply a sum by a number, multiply each addend of the sum by the number outside the parenthesis; a(b + c) = ab + ac

dividend

the number that is to be divided

divisor

the number that divides the dividend

dot plot

a diagram that shows the frequency of data. An x is placed above a number on a number line each time that number occurs in a set of data; also called a line plot

double number line

a graphic diagram that shows a proportional relationship between two quantities

E

equation

a mathematical sentence that contains an equal sign

equilateral triangle

a triangle having three congruent (same length) sides

equivalent

values that are equal; 1 + 19 = 2 = 18

equivalent ratio

two ratios that have the same value when simplified

evaluate

to find the value of an expression; find the answer

exponent

the number that tells how many equal factors there are; the number that tells how many times the bases was used as a factor; $5^3 = 5 \times 5 \times 5$;

expression

a variable or combination of variables, numbers and symbols that represent a mathematical relationship; it does not have an equal sign

F

factor

two or more numbers that are multiplied together to form a product

first quartile

the middle (median) of the lower half of the data on a box plot. One-fourth of the data lies below the first quartile, and three- quartiles lies above; also known as Q1

formula

an equation that shows a relationship among certain quartiles; a general mathematical statement or rule

fraction

a way of representing a part of a whole or a part of a group by telling the number of equal parts in the whole and the number of parts you are describing

G

gap

a place on a graph where not data values are present

geometry

the branch of mathematics that studies properties of points, lines, curves, plane figures, and solid shapes as well as their measurements and relationships

graph

a pictorial device used to show a numerical relationship

greater than

used to compare two numbers when the first number is larger than the second number; 5 > 3

greatest common factor

the greatest of the common factors of two or more numbers (GCF)

H

height

the perpendicular distance from a vertex to the opposite side of a plane figure

histogram

a special kind of bar graph in which the bars are used to represent the frequency of numerical data that have been organized into intervals

I

improper fraction

a fraction with a numerator that is greater than (or equal to) its denominator

independent variable

a variable in a mathematical equation whose value determines the dependent variable

inequality

a mathematical sentence that compares two unequal expressions using one of the symbols <, >, ≤, ≥, ≠

infinite

having no boundaries or limits

integers

the set of whole numbers and their opposites

interquartile range

the difference between the upper quartile and the lower quartile

isosceles triangle

a triangle having at least 2 congruent sides

L

least common multiple

the smallest common multiple of two or more numbers

less than

used to compare two numbers when the first number is smaller than the second number; 3 < 5

line plot

a diagram that shows the frequency of data. An x is placed above the number on a number line each time that number occurs in a set of data; also known as a dot plot

lower extreme

the smallest or least number out of a data set; usually farther away from the interquartile range than the other data in the set, also known as the minimum

M

maximum

the largest amount; the greatest number in a data set; also known as the upper extreme

mean

the sum of the data divided by the numbers of items in the data set; a type of average

mean absolute deviation

in statistics, the average distance of all the data points form the mean

measure of variation

a measure of how much a collection of data is spread out; commonly used types are range and quartile; also known as spread or dispersion

measures of center

numbers that are used to describe the center of a set of data; generally include mean, median and mode; also called measures of central tendency and measures of average

median

the middle number of a set of data when the data are arranged in numerical order; if the data has an even number, the median is the mean of two middle numbers

metric system

a system of measurement based on tens; the basic unit of capacity is the liter; the basic unit of length is the meter, the basic unit of mass is the gram

minimum

the smallest amount, the smallest number in a data set

minuend

in subtraction, the number you subtract from

mixed number

a number with an integer and fraction part

multiple

the product of a whole number and any other whole number

multiplicative inverse

two numbers whose product is 1; also called reciprocals

N

negative numbers

numbers less than 0 (zero)

net

a 2-dimensional shape that can be folded into a 3-dimensional figure

number line

a diagram that represents numbers as points on a line

numerator

a number or expression written above the line in a faction

numerical expression

a combination of numbers and operations

O

obtuse triangle

a triangle having one obtuse angle

opposites

having different signs but the same numeral; the same distance from 0 (zero) but on opposite sides of 0; their sum is 0

Order of Operation

the rules to follow when more than one operation is used in a numerical expression

1. Do all operations within grouping symbols first.
2. Evaluate all powers before other operations.
3. Multiply and divide in order from left to right.
4. Add and subtract in order from left to right.

ordered pair

a pair of numbers used to locate a pint in the coordinate plane; written in the form (x-coordinate, y-coordinate); also called coordinate pair

origin

the intersection of the x- and y- axes in a coordinate plane; described by the ordered pair (0, 0) or (x, y)

outlier

a number in a set of data that is much larger or much smaller than most of the other numbers in the set

P

percent

a special ratio that compares a number to 100 using the symbol %

plot

to place points on a graph or coordinate plane

polygon

a closed figure formed from line segments that only meet at their endpoints

positive numbers

numbers that are greater than 0

powers

numbers expressed using exponents

prism

a 3-dimensional figure that has two congruent and parallel faces that are polygons, the remaining faces are parallelograms

product

the result of multiplication

proportion

an equation showing that two ratios are equivalent

pyramid

a polyhedron whose base is a polygon and whose other faces are triangles that share a common vertex

Q

quadirlateral

a four-sided polygon

quadrants

the four sections of a coordinate grid that are separated by the axes

quantity

an amount

quotient

the result of division of one quantity by another

R

range

the difference between the greatest number and the least number in a set of numbers

rate

a ratio comparing two different units

ratio

a comparison of two numbers using division

rational number

a number that can be expressed as a ratio of two numbers

reciprocals

two numbers whose product is 1; also called the multiplicative inverse

rectangle

a quadrilateral with two pairs of congruent, parallel sides and four right angles

right rectangular prism

a prism with six rectangular faces where the lateral edge is perpendicular to the plane of the base

right triangle

a triangle that has one 90° angle

S

scalene triangle

a triangle that has no congruent sides

signed number

positive or negative number

solid figure

a geometric figure with 3 dimensions

spread

a measure of how much a collection of data is spread out; common types are range, and quartiles; also known as measures of variation

square-based pyramid

a polyhedron whose base is a square and whose other faces are triangles that share a common vertex

statistics

the science of collecting, organizing, representing and interpreting data

substitution

the replacement of the letters in an algebraic expression with known values

subtrahend

in subtraction, the number being subtracted

sum

the result of addition

surface area

the total area of the faces (including the bases) and curved surfaces of a solid figure

<center>T</center>

table

an organized way to list data; usually have rows and columns of data

tape diagram

a drawing that looks like a segment of tape, used to represent number relationships; also known as strip diagrams, bar model, fraction strip or length model

term

when a plus or minus sign separates an algebraic expression into parts

third quartile

the middle (median) of the upper half of the data on a box plot; one fourth of the data lies above and three-fourths of the data lies below the third quartile; also known as Q3

three dimensional

having length, width and height; existing in 3-dimensions; 3-D

trianglular prism

a prism with three rectangular faces and two triangular bases where the lateral edge is perpendicular to the plane of the base

triangular pyramid

a pyramid with a triangular base

<center>U</center>

unit cube

a precisely fixed quantity used to measure volume

unit rate

a rate with a denominator of 1

upper extreme

the greatest or largest number out of a data set; usually farther away from the interquartile range than other data in the set; also known as maximum

V

value

the amount something is worth

variable

a quantity that changes or can have different values; a symbol, usually a letter, that can stand for a variable quantity

vertex

the point at which two line segments, lines or rays meet to form an angle; plural-vertices

volume

the number of cubic units it takes to fill a figure

W

whole numbers

any number 0, 1, 2, 3, 4, 5, ... and so on

X

x-axis

the horizontal axis on a coordinate plane

x-coordinate

in an ordered pair, the value that is ALWAYS written first

Y

y-axis

in a coordinate plane, the vertical axis

y-coordinate

in an ordered pair, the value that is ALWAYS written second