Helena Public Schools
High School Mathematics
Recommended Vocabulary

Precision and rigor are two important characteristics of mathematics. Powerful students communicate with precise language. An effort must be made to intentionally teach each critical word.

Often a 6 step process is recommended to help students participate in developing of their understanding of the concepts of mathematics. They must also continue to revisit and revise their definition and representations of the critical word, recognizing that the level of precision and definition itself can take on new or more sophisticated meanings with higher level classes.
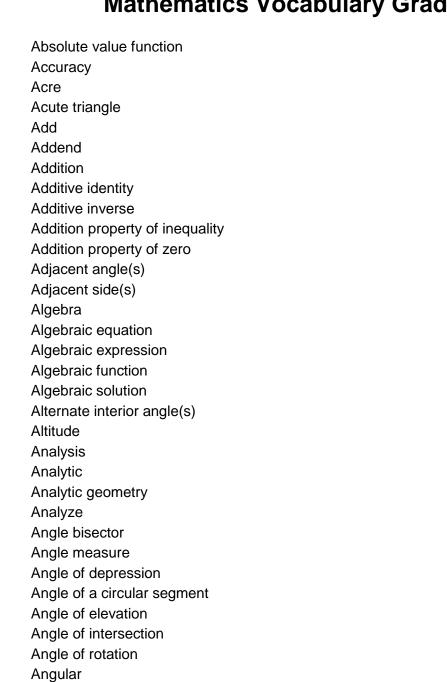
A Six Step Process for Learning Mathematics

1. Introduce the work with a definition along with any sketch or example. Multiple representations with algebraic, numeric and geometric bents are desirable.
2. Ask students to restate the definition in their own terms correcting any lack of precision or accuracy.
3. Have students create an example and non example of the word. Use graphics when possible.
4. Revisit and discuss the word over the next week and periodically over the year.
5. Use review sheets where students are asked to use the words as part of the normal classroom conversation.
6. Use games, activities, word games, jokes, rhymes and visuals to review the definitions.

It is expected that precise language and clear definitions will be used with all high school mathematics classes. The following is a list of terms is not complete but gives an overview of the types of terminology that students should be able to use on a consistent basis.

A
Abscissa
Absolute maximum
Absolute minimum
Absolute value
Absolute value equation

Mathematics Vocabulary Grades 9–12

Absolute value function
Accuracy
Acre
Acute triangle
Add
Addend
Addition
Additive identity
Additive inverse
Addition property of inequality
Addition property of zero
Adjacent angle(s)
Adjacent side(s)
Algebra
Algebraic equation
Algebraic expression
Algebraic function
Algebraic solution
Alternate interior angle(s)
Altitude
Analysis
Analytic
Analytic geometry
Analyze
Angle bisector
Angle measure
Angle of depression
Angle of a circular segment
Angle of elevation
Angle of intersection
Angle of rotation
Angular
Apothem
Application
Appraisal
Approximate
Approximate rational value
Approximate square root
Approximation
Arbitrary
Arc
Arc length

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Arc subtended by a chord
Area
Area of a rectangle/circle
Argument
Arithmetic
Arithmetic mean
Array
Ascending order
Assign
Associative property of addition/multiplication Asymmetric relation
Asymmetrical
Asymptote
Augment
Average
Average error
Axes
Axiom
Axis
Axis of abscissas
Axis of a conic
Axis of a cylinder
Axis of ordinates
Axis of a quadric
Axis of rotation
Axis of symmetry

B

Bar graph
Barycenter
Base
Base angle Base numeral
Base of cylinder
Upper base
Lower base
Base of figure
Base of a logarithm
Base of a power
Bell-shaped curve
Below
Below zero

Mathematics Vocabulary Grades 9–12

Bernoulli experiment
Best approximation
Between
Biased estimator
Biased statistic
Biconditional binary operation
Biconditional statement
Billions (place value)
Binary arithmetic
Binary digit
Binary form
Binary number
Binary operation
Binomial
Binomial curve
Binomial expansion
Binomial expression
Bisect
Bisector of a segment
Bisector
Body of rotation
Border
Borrow
Bottom
Bound
Boundary
Box-and-whisker
Braces
Brackets

C
Concurrent
Concurrent angle bisectors of a triangle
Concurrent altitudes of a triangle
Concurrent lines
Concurrent planes
Concyclic
Concyclic points
Conditional
Conditional equality
Conditional equation
Conditional inequality

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Conditional sentence
Cone
Congruence
Congruent

- arcs
- angles
- circles
- figures
- line segments
- polygons
- sides
- triangles

Conjugacy
Conjugate axes
Conjugate complex numbers
Conjugate pairs
Conjugate imaginary lines
Conjugate roots
Conjugate tangents
Conjunction
Consecutive angles
Consecutive even integers
Consecutive integers
Consecutive intervals
Consecutive odd integers
Consecutive sides
Consecutive tangents
Consecutive vertices
Complex rational expression
Consistence
Consistence of equations
Consistency
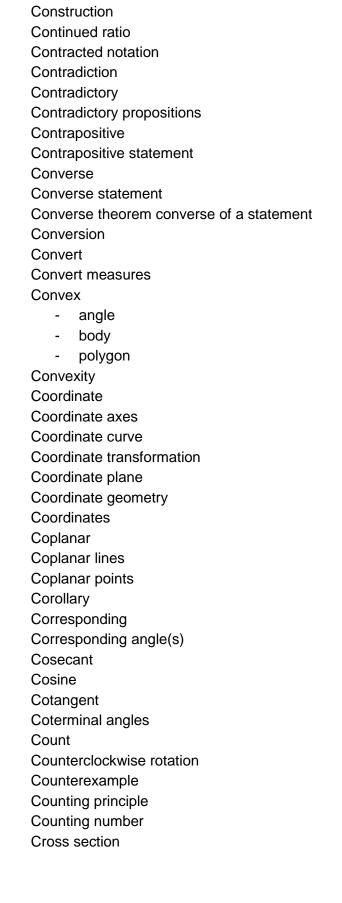Consistency of axioms
Consistent equations
Constant
Constant coefficient
Constant factor
Constant dilation
Constant term
Construct

Mathematics Vocabulary Grades 9–12

Construction

Continued ratio

Contracted notation

Contradiction

Contradictory

Contradictory propositions

Contrapositive

Contrapositive statement

Converse

Converse statement

Converse theorem converse of a statement

Conversion

Convert

Convert measures

Convex

- angle
- body
- polygon

Convexity

Coordinate

Coordinate axes

Coordinate curve

Coordinate transformation

Coordinate plane

Coordinate geometry

Coordinates

Coplanar

Coplanar lines

Coplanar points

Corollary

Corresponding

Corresponding angle(s)

Cosecant

Cosine

Cotangent

Coterminal angles

Count

Counterclockwise rotation

Counterexample

Counting principle

Counting number

Cross section

Cross product
Cube
Cube root
Cubic
Cubic number
Cubic inch
Cubic equation
Cubic centimeter
Cumulative
Cumulative frequency histogram
Cumulative relative frequency
Cup
Curve
Curved line
Cyclic
Cyclic vertices of a quadrilateral
Cylinder
Cylindrical surface

D
Dashed line
Data
Data table
Decade
Decagon
Deci-
Decimal
Decimal number system
Decimal part
Decimal place
Decimal point
Deck of cards
Decrease
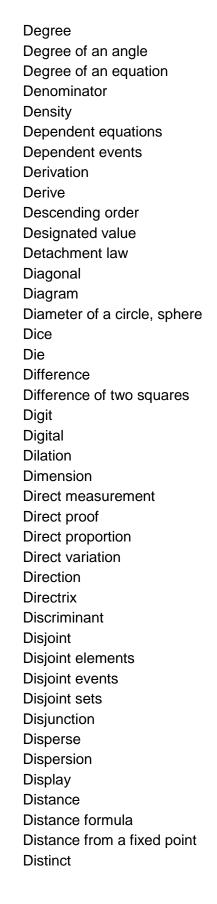Decreasing function
Decreasing sequence
Deduce
Deduction
Deductive
Deductive proof
Degenerative curve

Mathematics Vocabulary Grades 9–12

Degree
Degree of an angle
Degree of an equation
Denominator
Density
Dependent equations
Dependent events
Derivation
Derive
Descending order
Designated value
Detachment law
Diagonal
Diagram
Diameter of a circle, sphere
Dice
Die
Difference
Difference of two squares
Digit
Digital
Dilation
Dimension
Direct measurement
Direct proof
Direct proportion
Direct variation
Direction
Directrix
Discriminant
Disjoint
Disjoint elements
Disjoint events
Disjoint sets
Disjunction
Disperse
Dispersion
Display
Distance
Distance formula
Distance from a fixed point
Distinct

Distinct arrangements
Distinct points
Distinct roots
Distribution
Distributive property
Divide
Dividend
Divisibility
Divisible
Division
Divisor
Domain
Domain of a function
Dotted line
Dot
Dot product
Double
Double roots
Down payment
Dozen
Draw at random
Draw the figure

E
Edge
Element
Element in a set
Eliminate
Elimination
Ellipse
Empirical study
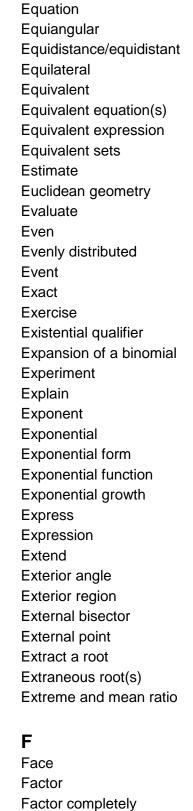Empirical probability
Empty set
Encircle
Endpoint
Enumeration
Equal
Equal chance
Equality
Equally likely

Mathematics Vocabulary Grades 9–12

Equally spaced points
Equation
Equiangular
Equidistance/equidistant
Equilateral
Equivalent
Equivalent equation(s)
Equivalent expression
Equivalent sets
Estimate
Euclidean geometry
Evaluate
Even
Evenly distributed
Event
Exact
Exercise
Existential qualifier
Expansion of a binomial
Experiment
Explain
Exponent
Exponential
Exponential form
Exponential function
Exponential growth
Express
Expression
Extend
Exterior angle
Exterior region
External bisector
External point
Extract a root
Extraneous root(s)
Extreme and mean ratio

F
Face
Factor
Factor completely
Factor tree

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Factorial
Factorization
Fahrenheit
Favorable outcomes
Feet
Fibonacci sequence
Field
Figure
Find
Finish
Finite
First quartile
First-degree equation
First-quadrant
Fixed line
Fixed point
Fixed value
Focus
Focus of a parabola
Focus point
Formal proof
Formed by a transversal
Formula
Fourth-quadrant
Fraction
Frequency
Frequency diagram
Frequency distribution
Function
Function notation
Fundamental theorem

G
Gallon
Generalization
Geometric
Geometry
Gram
Graph
Graphic calculator

Mathematics Vocabulary Grades 9–12

Graphic solution
Greater than
Greatest common factor
Greatest common monomial factor
Grid
Group

H
Half
Half-plane
Half-turn about the origin
Heading
Hectare
Height
Heptagon
Hexagon
Hexahedron
Histogram
Horizontal
Hour
Hundred
Hundredth
Hyperbola
Hypotenuse
Hypothesis

I
Identity property
If and only if
Illustrate
Image
Image point
Image set
Imaginary number
Imaginary root
Impossible event
Improper fraction
Inch
Included angle
Included side
Inconsistent equation
Increase

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Increasing function
Increasing sequence
Increasing series
Increment
Independent event
Independent variable
Index
Index of a radical
Indirect measurement
Indirect proof
Indivisible
Induction
Inductive reasoning
Inequality
Infinite
Infinitely many
Infinity
Initial
Input
Inscribe
Insert
Integer
Integral
Integrated mathematics
Intermediate value
Intercept
Interest
Interior angle
Interpolate
Intersect
Intersection of loci
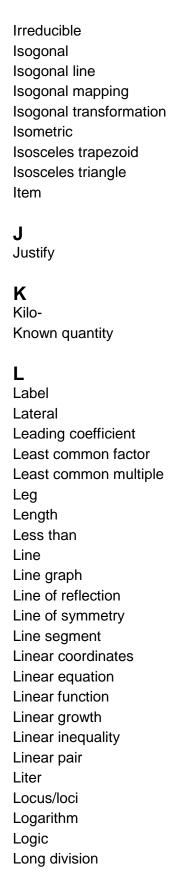Interval
Intransitive
Invariance
Inverse
Inverse equation
Inverse operation
Inverse variation
Irrational number
Irrational root

Mathematics Vocabulary Grades 9–12

Irreducible
Isogonal
Isogonal line
Isogonal mapping
Isogonal transformation
Isometric
Isosceles trapezoid
Isosceles triangle
Item

J
Justify

K
Kilo-
Known quantity

L
Label
Lateral
Leading coefficient
Least common factor
Least common multiple
Leg
Length
Less than
Line
Line graph
Line of reflection
Line of symmetry
Line segment
Linear coordinates
Linear equation
Linear function
Linear growth
Linear inequality
Linear pair
Liter
Locus/loci
Logarithm
Logic
Long division

Longitudinal axis
Loss
Lower base of cylinder
Lowest common denominator
Lowest common multiple

M
Magnitude
Major arc
Map
Map onto
Map into
Maximum
Mean
Measure
Measures of central tendency
Median
Meter
Metric
Midpoint
Mile
Milli-
Minimal
Minimum
Minor
Minuend
Minus
Minute
Mixed number
Modal
Mode
Model
Modular
Monomial
Multiple
Multiplicand
Multiplication
Multiplicity
Multiplier
Mutually exclusive

Mathematics Vocabulary Grades 9–12

N
Natural number
Nearest
Negation
Negative
Negative correlation
Negative reciprocal
Nonagon
Normal curve
Normal distribution
Notation
Null
Number
Number line
Numeral
Numerator

O
Oblique
Obtuse
Octagon
Octahedron
Odd
One-to-one correspondence
One-to-one function
One-to-one mapping
Open expression
Open interval
Open sentence
Open set
Operation
Operator
Opposite
Order
Ordered pair
Ordinate
Origin
Orthocenter
Ounce
Outcome
Output

P

Pace
Pair
Palindrome
Parabola
Parallel
Parallelogram
Partial products
Partition
Pascal's triangle
Pattern
Pentadecagon
Pentagon
Per
Percent
Percent increase
Percent decrease
Percentage error
Percentile
Perfect square
Perimeter
Period
Periodic function
Permutation
Perpendicular
Perpendicular bisector
Perspective
Pi
Pictograph
Picture graph
Pint
Pivoting
Place holder
Place value
Plane
Plane geometric figures
Plot
Plus
Point

Mathematics Vocabulary Grades 9–12

Point of tangency
Point-slope-form of line
Polygon
Polyhedron
Polynomial
Positive
Positive correlation
Possibility
Postulate
Pound
Power
Preceding
Prime
Principle
Prism
Probability
Profit
Proof
Proper fraction
Proper set
Proper subset
Property
Proportion
Protractor
Prove
Pyramid
Pythagorean Theorem
Pythagorean triple

Q
Quadrangle
Quadrant
Quadratic
Quadratic equation
Quadrilateral
Quantifier
Quantity
Quart
Quarter-turn
Quotient

R

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Radian
Radical
Radicand
Radius (Radii)
Random
Range
Rate
Rational
Rationalization
Rationalize the denominator
Raw data
Ray
Real number
Reciprocal
Rectangle
Rectangular coordinate system
Rectangular prism
Rectilinear
Reduce
Reference angle
Reflected image
Reflection
Reflex angle
Reflexive property
Region
Regular polygon (figure)
Reject
Relation
Relationship
Relativity
Remainder
Remote interior angles
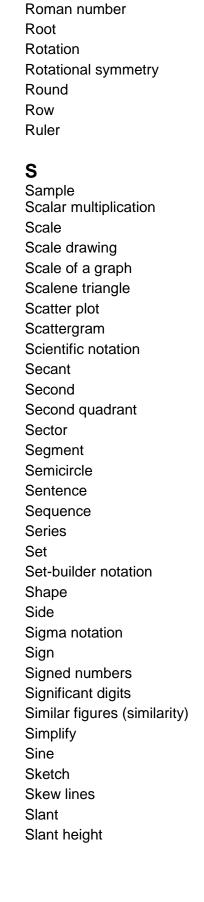Repeating decimal
Repetend
Replacement
Restricted domain
Reverse
Rhombohedreom
Rhomboid
Rhombus

Mathematics Vocabulary Grades 9–12

Right angle
Roman number
Root
Rotation
Rotational symmetry
Round
Row
Ruler

S
Sample
Scalar multiplication
Scale
Scale drawing
Scale of a graph
Scalene triangle
Scatter plot
Scattergram
Scientific notation
Secant
Second
Second quadrant
Sector
Segment
Semicircle
Sentence
Sequence
Series
Set
Set-builder notation
Shape
Side
Sigma notation
Sign
Signed numbers
Significant digits
Similar figures (similarity)
Simplify
Sine
Sketch
Skew lines
Slant
Slant height

Slope
Slope-intercept form
Solid
Solution set
Solve
Space
Sphere
Square
Square pyramid
Square root
Standard deviation
Standard form
Standardize
Statistics
Step function
Straight angle
Subscript
Subset
Substitution
Subtend
Subtend an angle
Subtraction
Subtrahend
Sum
Summation of series
Superscript
Supplement
Supplementary
Surface
Surface area
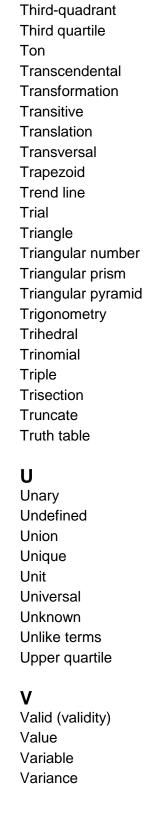Syllogism
Symbol
Symmetry
System

T
Table
Tally
Tangent
Term

Mathematics Vocabulary Grades 9–12

Tetrahedron
Theorem
Theoretical probability
Third-quadrant
Third quartile
Ton
Transcendental
Transformation
Transitive
Translation
Transversal
Trapezoid
Trend line
Trial
Triangle
Triangular number
Triangular prism
Triangular pyramid
Trigonometry
Trihedral
Trinomial
Triple
Trisection
Truncate
Truth table

U
Unary
Undefined
Union
Unique
Unit
Universal
Unknown
Unlike terms
Upper quartile

V
Valid (validity)
Value
Variable
Variance

Variation
Venn diagram
Verbal
Verify
Vertex (vertices)
Vertical
Volume

W
Whole number
Width
With replacement
Without replacement

X
x-axis
x-coordinate
x-intercept of a line

Y
y-axis
y-coordinate
y-intercept of a line
Yard

Z
Zero
Zero exponent
Zero slope