

7th Grade Math Definitions

Angles

Acute angle: **An angle that measures less than 90° .**

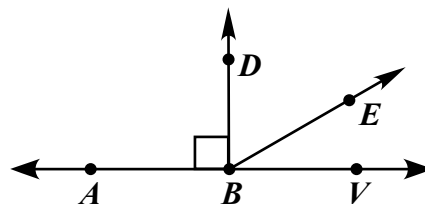
Complementary angles: **Two angles whose measures have a sum of 90° .**

Congruent angles: **Angles that have the same measure.**

Obtuse angle: **An angle that measures more than 90° and less than 180° .**

Right angle: **An angle that measures 90° .**

Supplementary angles: **Two angles whose measures have a sum of 180° .**



Parallel Lines and Transversals

Parallel lines: In the diagram, lines l and m do not intersect and are parallel.

Transversal: A line (t) that intersects two or more lines.

Corresponding angles: A pair of angles formed by a transversal and two lines; in the diagram, the pairs of corresponding angles are $\angle a$ and $\angle e$, $\angle b$ and $\angle f$, $\angle c$ and $\angle g$, and $\angle d$ and $\angle h$.

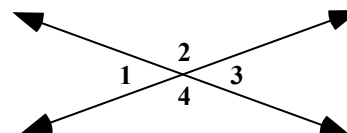
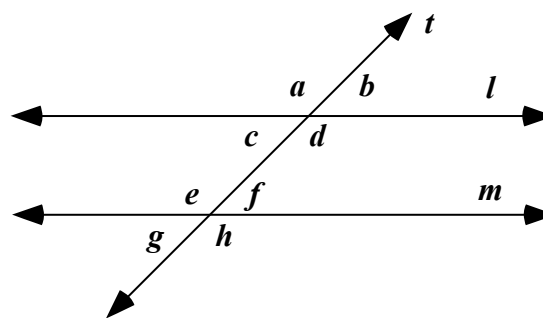
Interior angles: Angles on the inner sides of two lines cut by a transversal. In the diagram, angles c , d , e , and f are interior angles.

Exterior angles: Angles that are outside the two parallel lines. In the diagram, angles a , b , g , and h are exterior angles.

Alternate interior angles: A pair of angles formed by a transversal and two lines; in the diagram, the pairs of alternate interior angles are $\angle c$ and $\angle f$ and $\angle d$ and $\angle e$.

Alternate exterior angles: A pair of angles formed by a transversal and two lines; in the diagram, the pairs of alternate exterior angles are $\angle a$ and $\angle h$ and $\angle b$ and $\angle g$.

Vertical angles: A pair of opposite and congruent angles formed by intersecting lines. In the diagram, $\angle 1$ and $\angle 3$ are vertical angles and $\angle 2$ and $\angle 4$ are also congruent and vertical angles.



Order of Operations -- P.E.M.D.A.S.

- 1) Evaluate the expressions inside the *grouping symbols*
- 2) Evaluate all exponents
- 3) Multiply and/or divide in order from left to right
- 4) Add and/or subtract in order from left to right

Grouping Symbols include:

- Parentheses ()
- Brackets []
- Fraction Bars, as in $\frac{4+6}{2}$, which means $(4+6) \div 2$

Triangles

Scalene Triangle: A triangle with no congruent sides or angles.

Isosceles Triangle: A triangle with two congruent sides or two congruent angles.

Equilateral Triangle: A triangle with all sides congruent and all angles congruent (60°).

Acute Triangle: A triangle with all angles measuring less than 90° .

Obtuse Triangle: A triangle containing one obtuse angle and two acute angles.

Right Triangle: A triangle containing a right angle and two acute angles.

Quadrilaterals

Parallelogram: A quadrilateral with two pair of parallel sides.

Rectangle: A parallelogram with four right angles.

Square: A rectangle with four congruent sides.

Rhombus: A parallelogram with all sides congruent.

Trapezoid: A quadrilateral with exactly one pair of parallel sides.

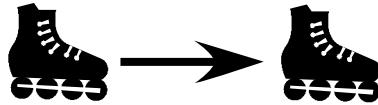
Area & Perimeter

Perimeter: The distance around a polygon.

Area: The number of square units needed to cover a given surface.

Transformations

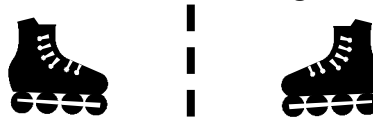
Translation: The movement (slide) of a figure along a straight line without turning.



Rotation: The figure turns around a fixed point.



Reflection: The figure flips across a line of reflection, creating a mirror image.



Exponents

$$4^4 = 4 \times 4 \times 4 \times 4 = 256 \quad 3^4 = 3 \times 3 \times 3 \times 3 = 81 \quad 2^4 = 2 \times 2 \times 2 \times 2 = 16$$

$$4^3 = 4 \times 4 \times 4 = 64 \quad 3^3 = 3 \times 3 \times 3 = 27 \quad 2^3 = 2 \times 2 \times 2 = 8$$

$$4^2 = 4 \times 4 = 16 \quad 3^2 = 3 \times 3 = 9 \quad 2^2 = 2 \times 2 = 4$$

$$4^1 = 4 \quad 3^1 = 3 \quad 2^1 = 2$$

$$4^0 = 1 \quad 3^0 = 1 \quad 2^0 = 1$$

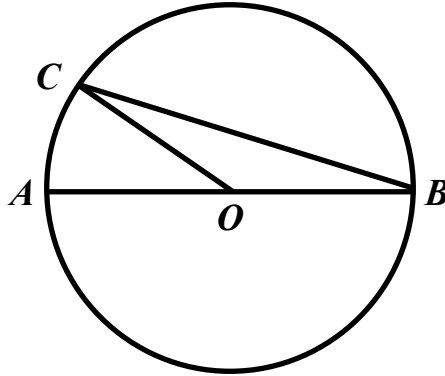
Circles

Circle: A set of points equal distance from a given point, called the center of the circle.

Diameter: A line segment that passes through the center of a circle, and whose endpoints lie on the circle.

Radius: A line segment whose endpoints are the center of a circle and any point on the circle.

Chord: A line segment whose endpoints are any two points on a circle.



Geometric Solids

Polyhedron: A three dimensional closed figure with faces that are polygons.

Face: A flat surface of a polyhedron.

Edge: A line segment at which two faces of a polyhedron intersect.

Vertices: Are the corner points of a solid figure.

Prism: A polyhedron with at least two faces that are congruent and parallel.

Cube: A rectangular prism with six congruent square faces.

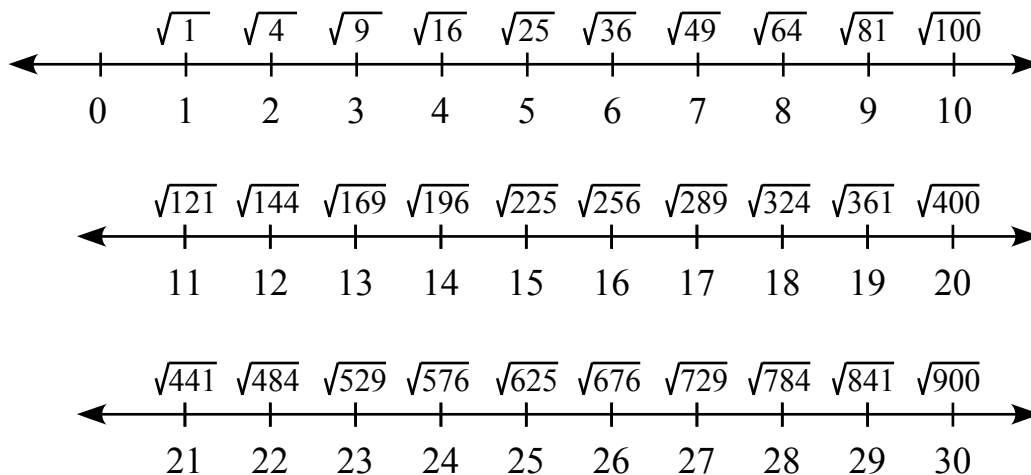
Pyramid: A polyhedron with a single base that is a polygon and faces that are triangles.

Cone: A 3-D figure with one circular base and one vertex.

Cylinder: A solid figure that has two circular bases. The bases are congruent and parallel.

Sphere: A 3-D figure. All of the points on the surface of the sphere are the same distance from the center.

Square Roots



The Coordinate Plane

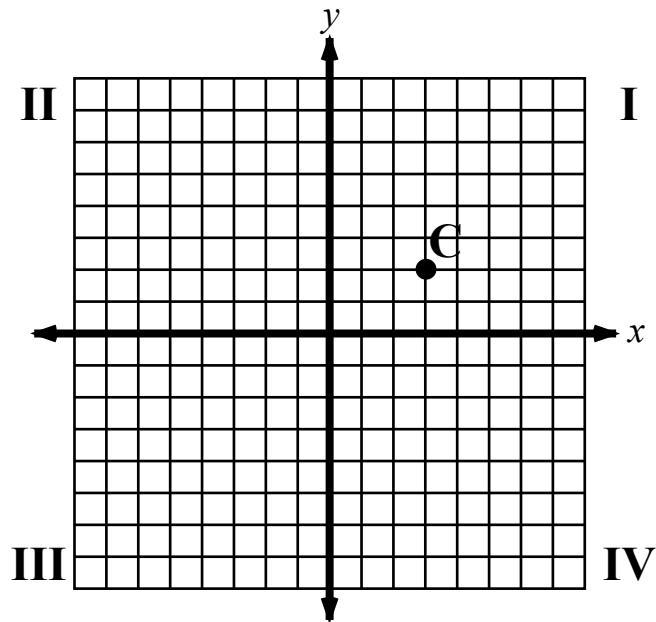
x-axis: a number line that extends to the right and left of the origin.

y-axis: a number line that extends above and below the origin.

origin: the intersection of the x and y axis, (0,0)

ordered pair: A pair of numbers that give the coordinates of a point on a grid in this order (x-axis, y-axis).

Point C is at (3,2)



The x-axis and the y-axis separate the coordinate plane into four regions, called quadrants. The quadrants are named using Roman numerals: I, II, III, and IV.

Data Analysis - Measures of Central Tendency

Average: a measure of central tendency, a number that summarizes a set of data by giving some sense of the typical (often the middle) value.

Mean: add all the values in a set and divide by the total number of values. (An equal distribution)

Median: the number that falls exactly in the middle of a set of data when the data are arranged in order from least to greatest.

Mode: the value in a set of data that occurs the most. Sometimes there is one value that occurs more often than any other. Sometimes there is more than one value that occurs more often. In this case, all these values are modes of the set of data. Sometimes there is no value that occurs more often than the others. In this case, there is no mode.

Max: the largest value in a set of data

Min: the smallest value in a set of data

Range: the difference between the greatest and least numbers in a set of data.(Max - Min)

Number Sense:

Prime Number: A whole number that has exactly 2 factors.

Composite Number: A whole number that has more than 2 factors.

Square Number: A whole number with repeat factors and has an odd number of factors.

Factor: A whole number that divides another whole number evenly.

Multiple: the product when multiplying two positive integers together.