

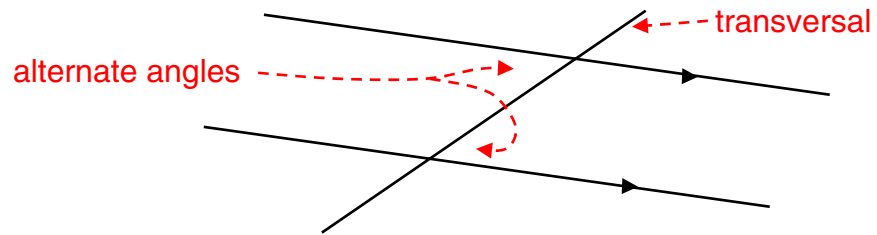


## Appendix A: Glossary

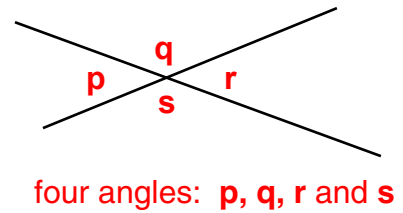
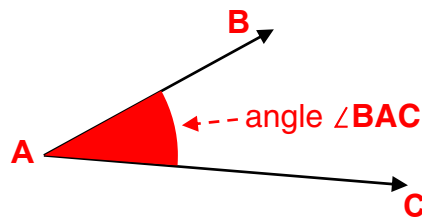
**Acute Angle** An *angle* that measures less than  $90^\circ$ .

**Acute Triangle** A *triangle* that has three *acute angles*.

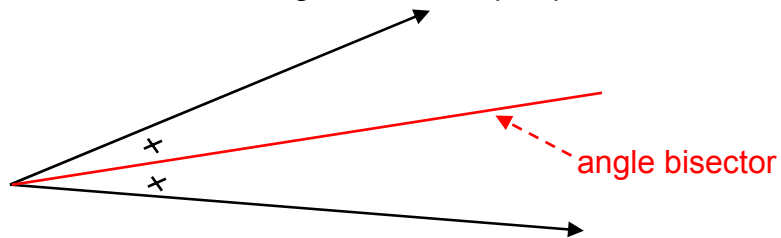
**Alternate Angles** *Angles* that are between *parallel lines*, but on opposite sides of a *transversal*.



**Angle ( $\sphericalangle$ )** When lines, line segments or rays intersect they form angles.  
(See *size of an angle*)



**Angle Bisector** The line that divides an *angle* into two equal parts.

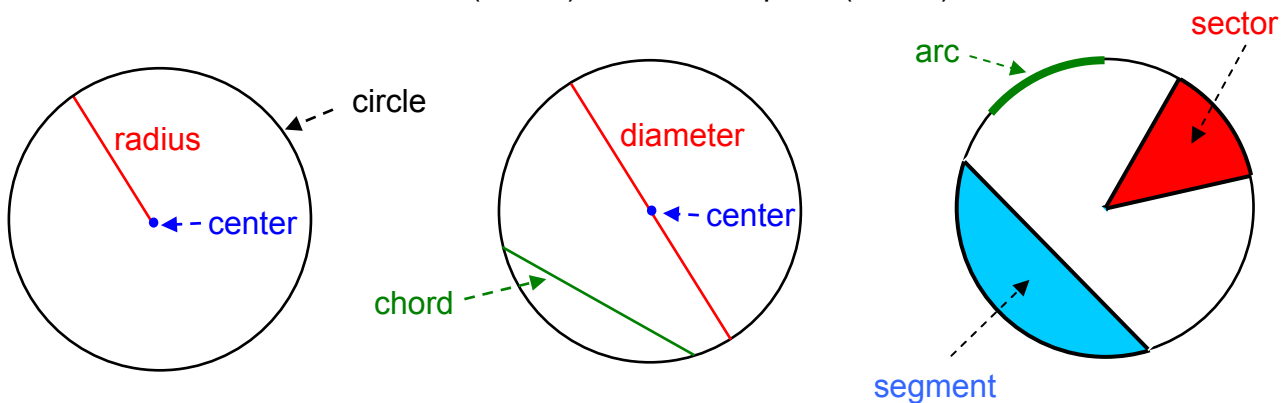


**Apex** The point where the triangular sides of a pyramid meet.  
The point at the tip of a cone. (See *pyramid* or *cone* for illustration)

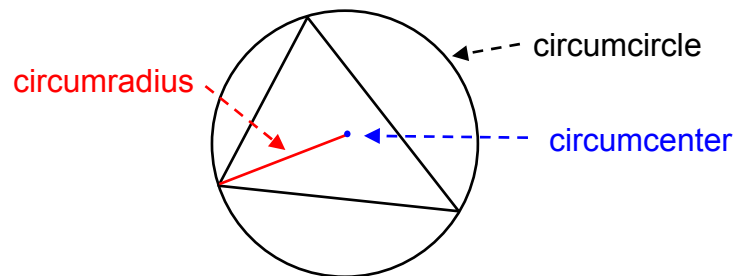
**Arc** The curved path from one point on a circle (or part of a circle) to another. (See *circle* for illustration)  
The lines made by a compass during a construction.



- Axis of Symmetry** See **Line of Symmetry**.
- Bilateral Symmetry** See **Reflective Symmetry**.
- Bisect** Bisect means to cut in half. This can be used with line segments or Angles. (See *angle bisector* and *right bisector*)
- Chord** A *line segment* whose end points lie on a *circle* or an *ellipse*. (See *circle* for illustration)
- Circle** A closed curve, that lies in a plane, with all its points the same distance (*radius*) from a fixed point (center).



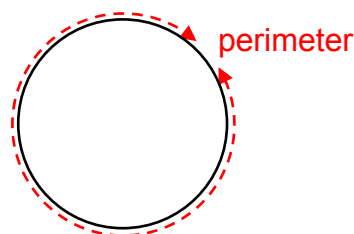
- Circumcircle** The *circle* that passes through the three *vertices* of a *triangle*.



- Circumcenter** The center of the *circumcircle* (See *circumcircle* for illustration)

- Circumradius** The radius of the *circumcircle* (See *circumcircle* for illustration)

- Circumference** The *perimeter* of a *circle*. The circumference is the path around the circle or the length of that path.



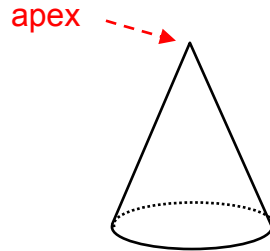


**Complementary Angles**

Angles that add to  $90^\circ$ .

**Cone**

A solid with a *circle* as a base and a smooth side that ends in a *point*. The point is called the *apex*.

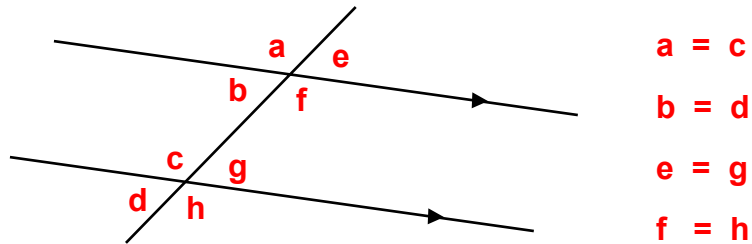


**Congruent ( $\cong$ )**

Two shapes are congruent when all the sides and angles of one shape exactly match those of the other shape.

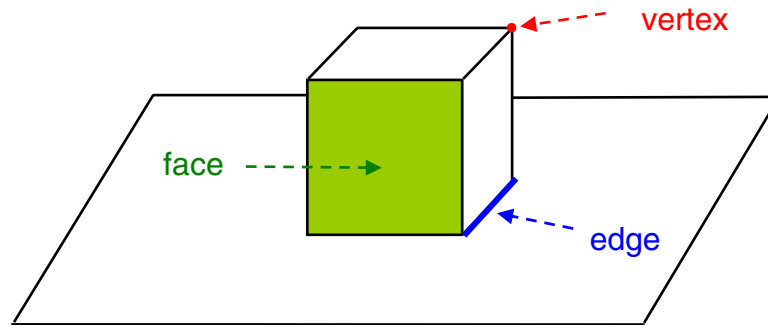
**Corresponding Angles**

Four pairs of angles formed at *parallel lines* on the same side of a *transversal* and in the same relative position with respect to the parallel lines (both angles are either above or below the parallel lines).



**Cube**

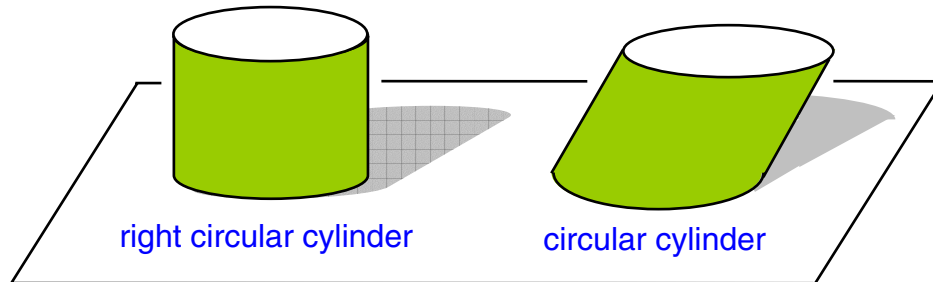
A solid shape which has six *congruent squares* for its *faces*. The faces and *edges* are *perpendicular* to each other. A cube has 8 *vertices* and 12 *edges*.



**Cylinder**

A solid shape with two identical parallel circular faces and a smooth surface that joins the circular faces. If that surface were flattened out, it would form a rectangle.

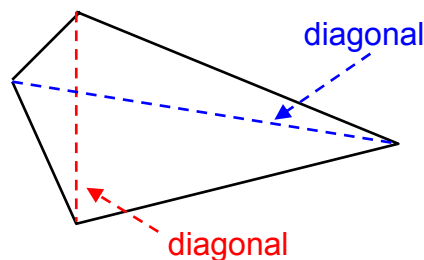
If the circular faces are *perpendicular* to the surface joining the ends, it is called a '**right circular cylinder**'.

**Decagon**

A ten sided *polygon*. A **regular** decagon has ten equal sides and ten equal angles. (See *polygon* for illustration)

**Diagonal**

A *line segment* drawn from a *vertex* of a *quadrilateral* to the opposite vertex.

**Diameter**

A *chord* that passes through the *center* of the *circle*. It can also mean the length of the diameter. (See *circle* for illustration)

**Degree(s) ( ° )**

A unit used to measure the *size of an angle*. Each degree is  $\frac{1}{360}$  of a *full turn*. The math symbol for degree is shown in brackets.

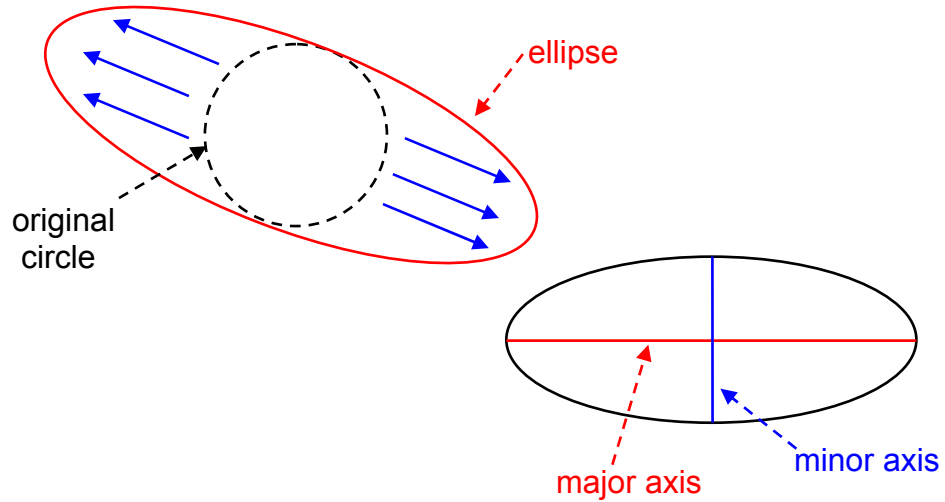
**Edges**

The *line segments* where *faces* meet on a solid shape (see *cube* for illustration).



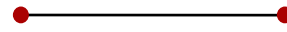
**Ellipse**

The smooth closed curve that is formed when a *circle* is stretched uniformly in two opposite directions.



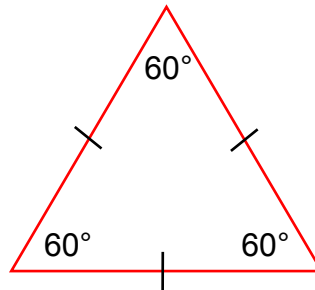
**Endpoints**

The end points of a *line segment*.



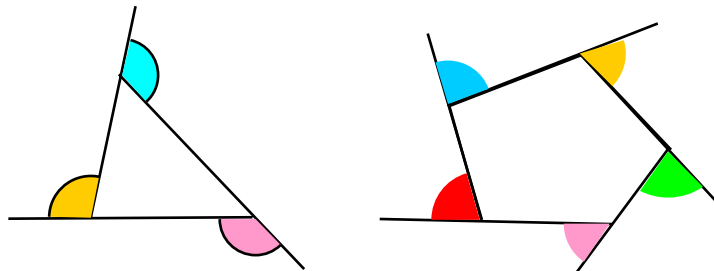
**Equilateral Triangle**

A triangle that has three sides of equal length and each interior angle is  $60^\circ$ .



**Exterior Angle**

An angle between the side of a triangle and an extended side of a triangle. For a polygon, it is an angle between a side and an adjacent extended side.

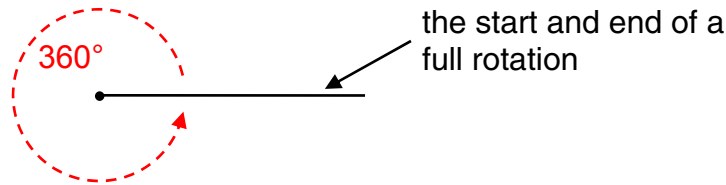


**Faces**

The surfaces that enclose a solid shape (see *cube* for illustration).

**Full Turn**

A  $360^\circ$  angle. A rotation through an angle of  $360^\circ$  (sometimes called a **full rotation**).

**Half Turn**

A  $180^\circ$  angle. A rotation through an angle of  $180^\circ$ .

**Heptagon**

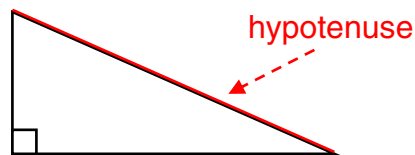
A seven-sided polygon. A **regular** heptagon has seven equal sides and seven equal angles. (See *polygon* for illustration)

**Hexagon**

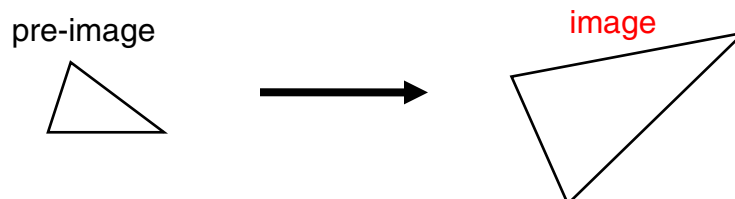
A six-sided *polygon*. A **regular** hexagon has six equal sides and six equal angles. (See *polygon* for illustration)

**Hypotenuse**

In a *right triangle*, the hypotenuse is the side opposite the *right angle*.

**Image**

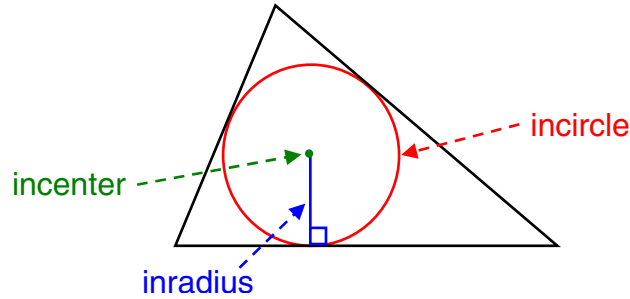
A shape after it has undergone a *transformation*.





**Incircle**

The circle that just touches the three sides of a *triangle* (sometimes called the **inscribed circle**)



**Incenter**

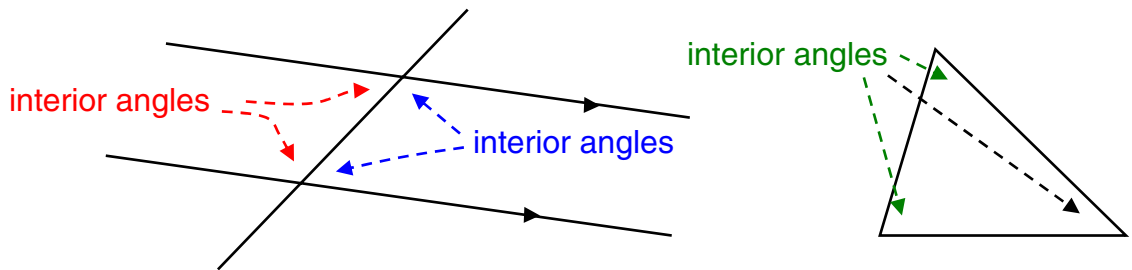
The *center* of the *incircle*. (See *incircle* for illustration)

**Inradius**

The *radius* of the *incircle*. (See *incircle* for illustration)

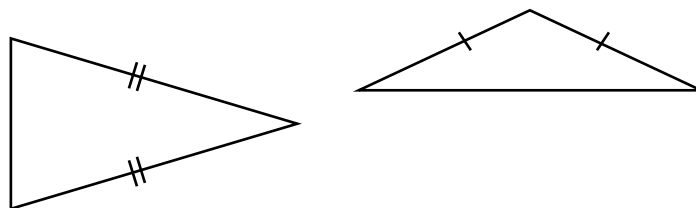
**Interior Angles**

The angles that are between *parallel lines* but on the same side of a *transversal*. The angles inside a triangle or polygon.



**Isosceles Triangle**

A *triangle* that has two sides of equal length.



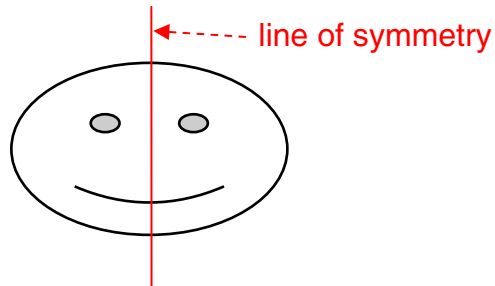
**Line**

A line is a straight path that passes through any two points and goes forever in two directions.

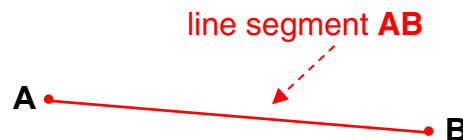


**Line of Symmetry**

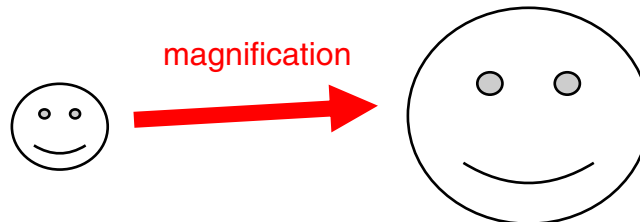
The *mirror* line used in a *reflection* that reflects a shape exactly on top of itself (sometimes called the **axis of symmetry**).

**Line Segment**

The part of a line that is between two points called *endpoints*.

**Magnification**

A *transformation* that changes only the size of a shape (sometimes magnifications are called **dilations**).

**Magnification Factor**

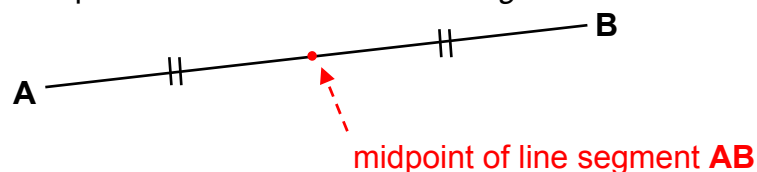
The number that all the lengths of a pre-image shape are multiplied by to get the image shape during a *magnification*. If it is greater than 1, the image is larger than the pre-image. If it is smaller than 1, the image is smaller than the pre-image.

**Major Axis**

The longest *chord* in an *ellipse* that passes through its exact center. (See *ellipse* for illustration)

**Midpoint**

The point in the middle of a *line segment*.

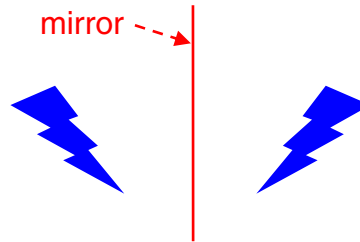






**Minor Axis** The shortest *chord* in an *ellipse* that passes through its exact center. (See *ellipse* for illustration)

**Mirror** The line used in the *reflection transformation*.



**Net** A pattern that can be cut out and folded to form a model of a solid.

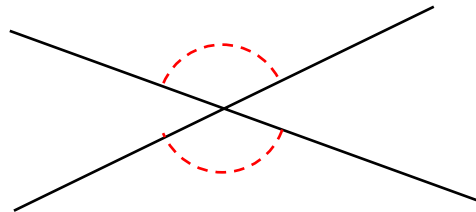
**Nonagon** A nine-sided polygon. A **regular** nonagon has nine equal sides and nine equal angles. (See *polygon* for illustration)

**Obtuse Angle** An *angle* that measures more than  $90^\circ$  but less than  $180^\circ$ .

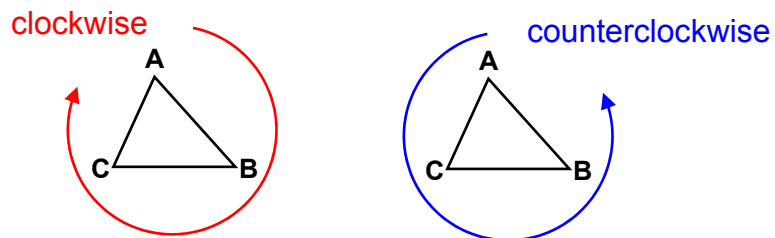
**Obtuse Triangle** A *triangle* that has one *obtuse angle*.

**Octagon** An eight-sided polygon. A **regular** octagon has eight equal sides and eight equal angles. (See *polygon* for illustration)

**Opposite Angles** Angles that are on opposite corners at an intersection (sometimes called **vertically opposite angles**).



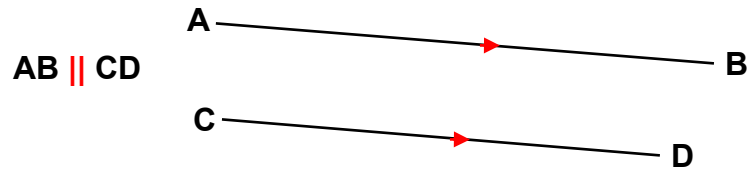
**Orientation** Clockwise or counterclockwise direction as you travel around the perimeter of a plane shape.





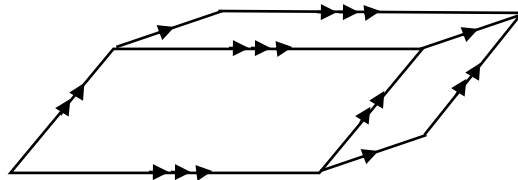
**Parallel Lines**  
( || )

Lines that do not intersect. Indicated with small arrows on the lines. The math symbol for parallel line is shown in brackets.



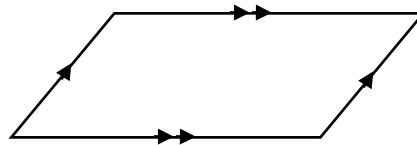
**Parallelepiped**

A solid shape which has six parallelograms for its faces.



**Parallelogram**

A *quadrilateral* that has two pairs of parallel sides.



**Pentagon**

A five-sided *polygon*. A **regular** pentagon has five equal sides and five equal angles. (See *polygon* for illustration)

**Perimeter**

The path around a closed shape or the length of that path.

**Perpendicular**

A line that is at *right angles* to another line.

**Perpendicular Lines** ( ⊥ )

Lines that intersect at right angles. The math symbol for perpendicular line is shown in brackets.

**Plane**

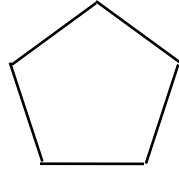
An infinitely large flat surface.

**Point**

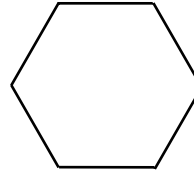
A point is a location. A point has no size, length or width.

**Polygon**

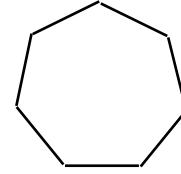
A closed shape formed by five or more line segments. Sometimes *quadrilaterals* and *triangles* are considered to be a polygons.



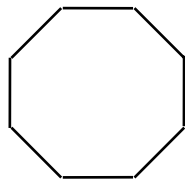
pentagon  
(5 sides)



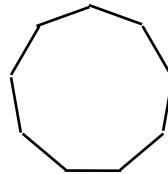
hexagon  
(6 sides)



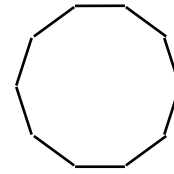
heptagon  
(7 sides)



octagon  
(8 sides)



nonagon  
(9 sides)



decagon  
(10 sides)

**Polyhedron**  
(pl. **Polyhedra**)

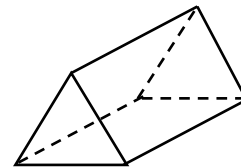
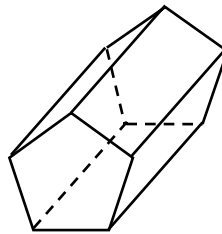
Solid shapes which have surfaces made from *triangles*, *quadrilaterals* and *polygons*.

**Pre-image**

A point or shape before it has undergone a *transformation*.  
(See *image* for illustration)

**Prism**

A solid that has two parallel polygonal ends and rectangular sides joining the polygons. The ends can also be triangles or quadrilaterals.

**Proof**

A logically reasoned explanation of why something is true.

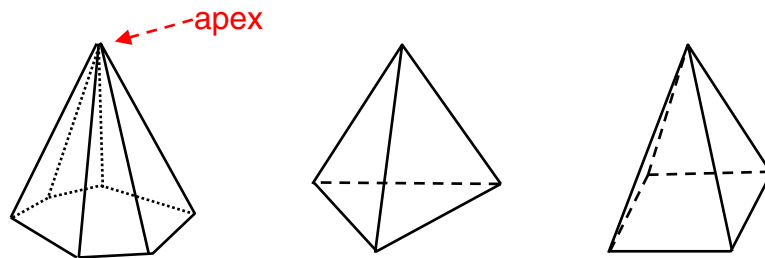
**Protractor**

A tool for measuring the *size of an angle*.



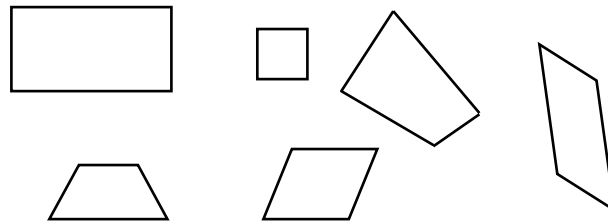
### Pyramid

A solid shape that has a *polygonal* base and sides that are triangles. The triangular sides meet at a point called the *apex*. The base of a polygon can be any polygon but most often is either a triangle or a quadrilateral.



### Quadrilateral

A closed shape formed by four line segments.



### Radius (pl. Radii)

The line segment from the center of a *circle* to the circle. The line segment from the center of a *sphere* to the surface of the sphere. Radius can also mean the length of a radius.

### Radius of an Arc

The distance from the center of an *arc* to the arc itself.

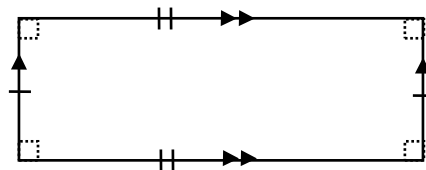
### Ray

A ray is the part of a straight *line* that starts at a point and goes in one direction forever.



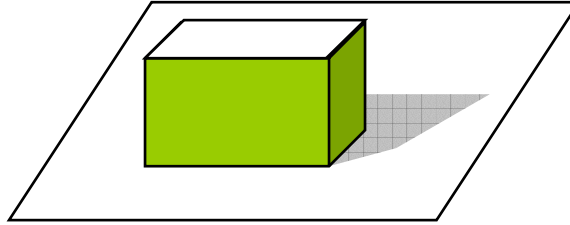
### Rectangle

A *parallelogram* that has four *right angles*. Its opposite sides have equal lengths.



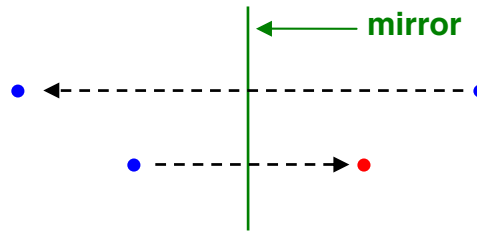
**Rectangular  
Parallelepiped**

A solid shape formed with 6 faces that are *rectangles* or *squares*. It is a *parallelepiped* in which the *faces* meet at right angles.

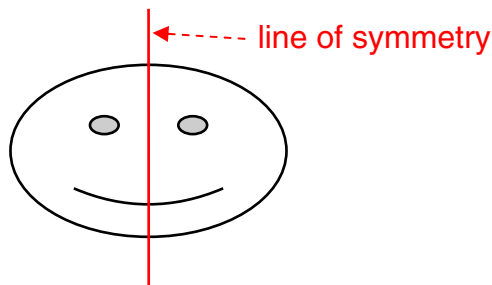
**Reflection**

A *transformation* that moves a point to another point that is an equal distance on the other side of a line.

The line is called the **mirror**. The mirror is the *right bisector* of the line joining a *pre-image* point to its *image*.

**Reflective  
Symmetry**

A shape has reflective symmetry if it can be reflected onto an exact copy of itself and is in the same position. The mirror is called the **line of symmetry**. Reflective symmetry is sometimes called **bilateral symmetry** or **line symmetry**.

**Reflex Angle**

An *angle* that measures more than  $180^\circ$ .

**Regular Polygon**

A *polygon* which has equal angles and equal sides.  
(See *polygon* for illustration)



**Rhombus**  
(pl. **Rhombi**)

A *parallelogram* that has four sides of equal length.

**Right Angle**

An *angle* that measures  $90^\circ$ .

**Right Bisector**

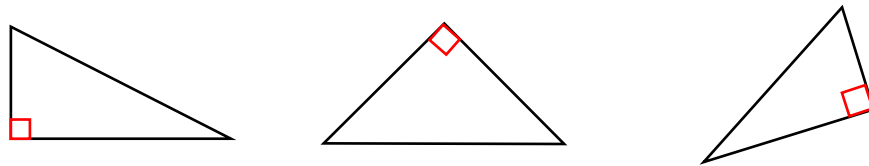
A line that is *perpendicular* to a *line segment* and passes through the *midpoint* of that line segment. Right bisector is sometimes called **perpendicular bisector**.

**Right Circular Cylinder**

A cylinder whose circular ends are perpendicular to the curved faces.

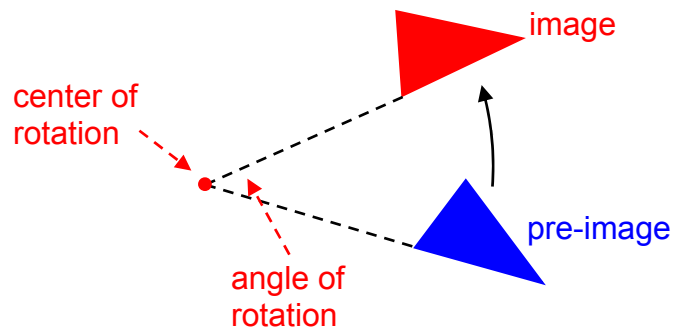
**Right Triangle**

A *triangle* that has one right angle.



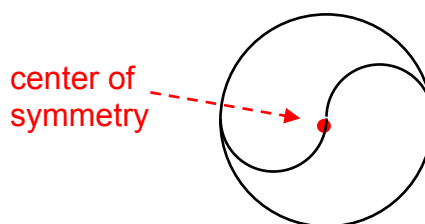
**Rotation**

A *transformation* that moves points and shapes by turning them around a fixed point through a fixed angle. The fixed point is called the **center of rotation**. The fixed angle is called the **angle of rotation**.



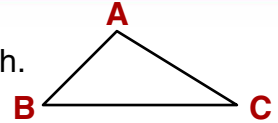
**Rotational Symmetry**

A shape has rotational symmetry if it can be rotated onto an exact copy of itself and is in the same position. The center of rotation is called the **center of symmetry**.



**Scalene Triangle**

A *triangle* that has three sides of different length.

**Sector**

A region inside a *circle* enclosed by an *arc* of the circle and the radii to the ends of the arc. (See *circle* for illustration)

**Segment**

A region inside a *circle* enclosed by an *arc* and a *chord*. (See *circle* for illustration)

**Similar**

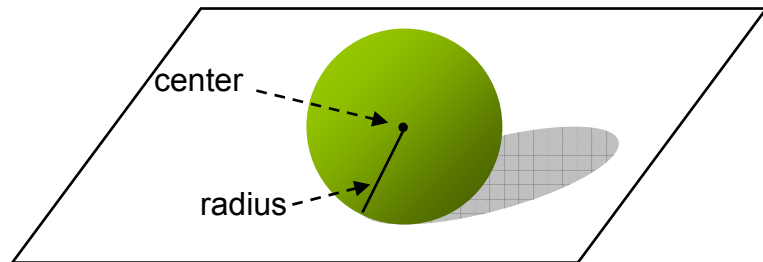
Two shapes are similar when all the angles of one shape match the angles of the other shape.

**Size of an Angle (  $\Delta$  )**

How much you have to turn one line of an *angle* so that it lies on top of the other line of the angle. The size of an angle is measured in *degrees* ( $360^\circ = 1$  full turn). (Sometimes called the **measure** of an angle)

**Sphere**

A solid shape whose surface is formed from all points that are a fixed distance (*radius*) from a fixed point (**center**).

**Square**

A *quadrilateral* with four right angles and four equal sides.

**Straight Angle**

An *angle* that measures  $180^\circ$ .

**Supplementary Angles**

*Angles* that add to  $180^\circ$ .

**Symmetry**

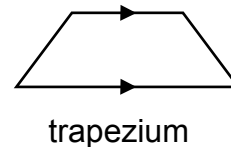
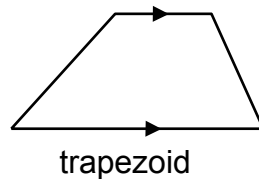
A shape has symmetry if it can be transformed into a *congruent* shape that lies on top of itself. (See *reflective symmetry* or *rotational symmetry* for illustrations)

**Tessellation**

A pattern created by completely covering a surface with similar shapes.



- Theorem** A statement of a mathematical fact that can be proved.  
(See *proof*)
- Tiles** The shapes used to make a *tessellation*.
- Transformation** A transformation is a rule or method of changing a shape.  
**Rotations, reflections, translations** and **magnifications** are examples of transformations.
- Translation** A *transformation* that moves one shape to a different place without rotation or reflection. (Sometimes called a **glide** or a **shift** )
- Transversal** A line that intersects *parallel* lines.
- Trapezoid** A *quadrilateral* that has only one pair of *parallel* sides. This is called a *trapezium* depending on whether or not it has *reflective symmetry*.



- Triangle ( $\Delta$ )** A closed shape formed by three *line segments*. The line segments meet at three points called *vertices*.
- Vertex**  
(pl. **Vertices** ) The point where the lines that form an *angle* meet.  
A point where the sides of a *triangle* or sides of a *polygon* meet.  
The point where *edges* of a solid shape meet.  
The points where the corners of tiles in a *tessellation* meet

