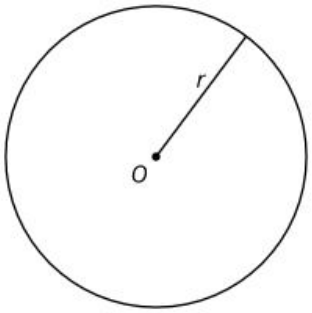
Unit 1 Glossary Terms

circle

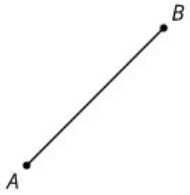
A circle of radius r with center O is the set of all points that are a distance r units from O .



To draw a circle of radius 3 and center O, use a compass to draw all the points at a distance 3 from O .

Line segment

A set of points on a line with two endpoints.



Parallel

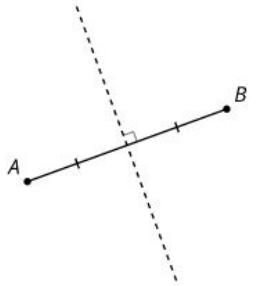
Two lines that don't intersect are called parallel. We can also call segments parallel if they extend into parallel lines.

Conjecture

A reasonable guess that you are trying to either prove or disprove.

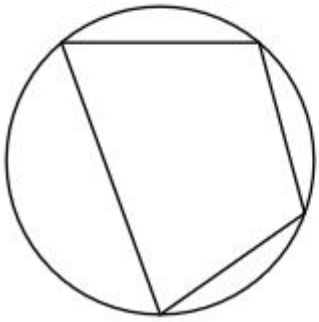
Perpendicular bisector

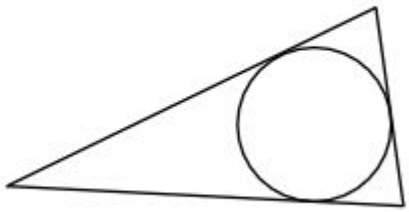
The perpendicular bisector of a segment is a line through the midpoint of the segment that is perpendicular to it.



Inscribed

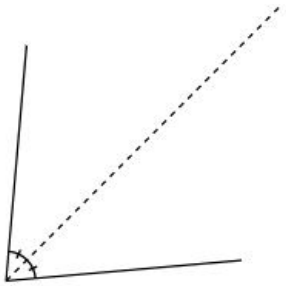
We say a polygon is inscribed in a circle if it fits inside the circle and every vertex of the polygon is on the circle. We say a circle is inscribed in a polygon if it fits inside the polygon and every side of the polygon is tangent to the circle.





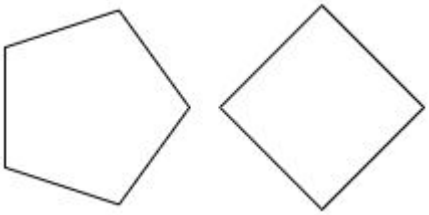
Angle bisector

A line through the vertex of an angle that divides it into two equal angles.



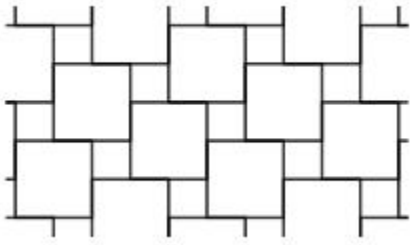
Regular polygon

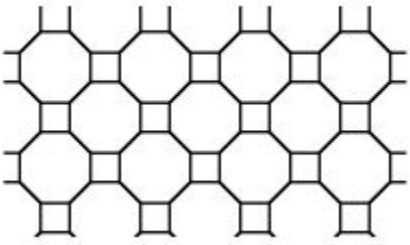
A polygon where all of the sides are congruent and all the angles are congruent.



Tessellation

An arrangement of figures that covers the entire plane without gaps or overlaps.



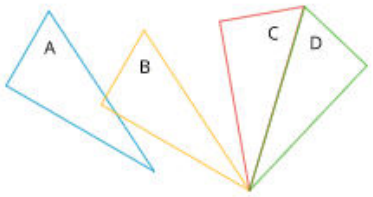


Assertion

A statement that you think is true but have not yet proved.

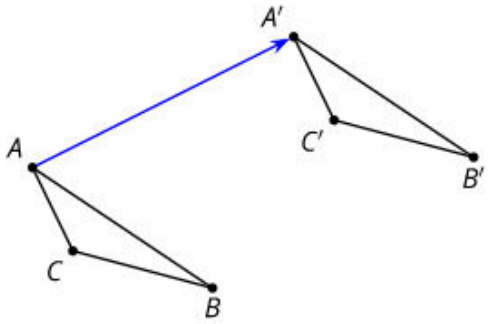
Congruent

One figure is called congruent to another figure if there is a sequence of translations, rotations, and reflections that takes the first figure onto the second.



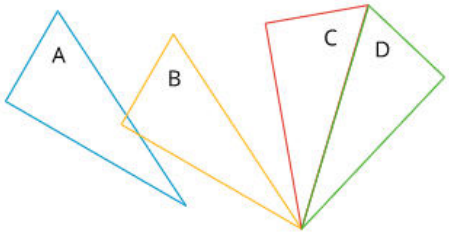
Image

If a transformation takes A to A', then A is the original and A' is the image.



Rigid transformation

A rigid transformation is a translation, rotation, or reflection. We sometimes also use the term to refer to a sequence of these.



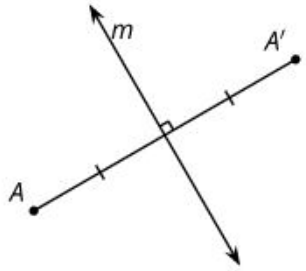
Theorem

A statement that has been proved mathematically.

Reflection

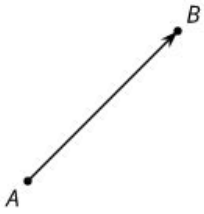
A reflection is defined using a line. It takes a point to another point that is the same distance from the given line, is on the other side of the given line, and so that the segment from the original point to the image is perpendicular to the given line.

In the figure, A' is the image of A under the reflection across the line m .



Directed line segment

A line segment with an arrow at one end specifying a direction.

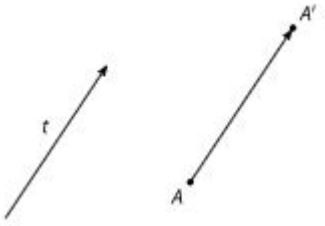


Translation

A translation is defined using a directed line segment. It takes a point to another point so that the directed line segment from the original point to the

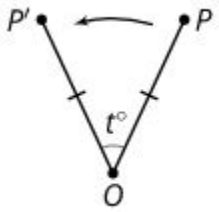
image is parallel to the given line segment and has the same length and direction.

In the figure, A' is the image of A under the translation given by the directed line segment t .

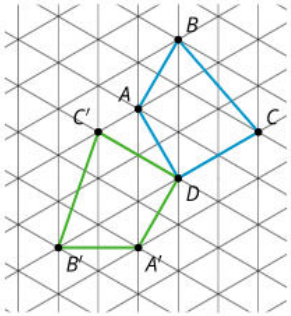


Rotation

A rotation has a center and a directed angle. It takes a point to another point on the circle through the original point with the given center. The 2 radii to the original point and the image make the given angle.



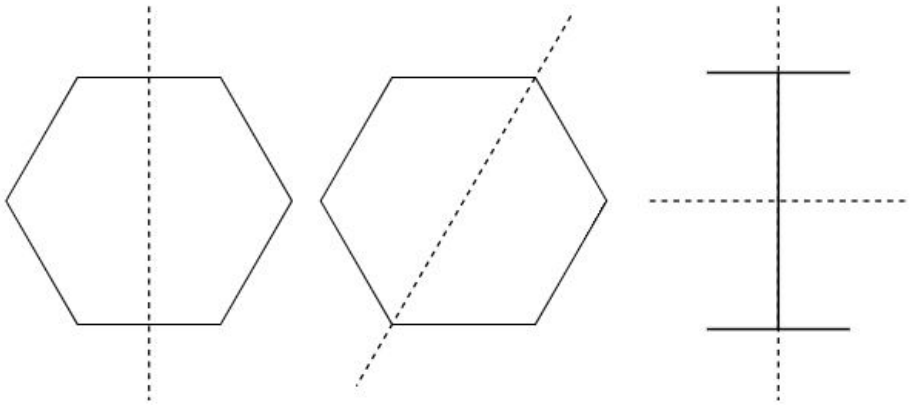
P' is the image of P after a counterclockwise rotation of $t°$ using the point O as the center.



Quadrilateral $ABCD$ is rotated 120 degrees counterclockwise using the point D as the center.

Line of symmetry

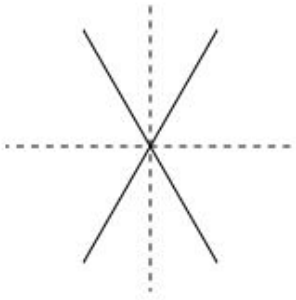
A line of symmetry for a figure is a line such that reflection across the line takes the figure onto itself.



The figure shows two lines of symmetry for a regular hexagon, and two lines of symmetry for the letter I.

Reflection symmetry

A figure has reflection symmetry if there is a reflection that takes the figure to itself.



Symmetry

A figure has symmetry if there is a rigid transformation which takes it onto itself (not counting a transformation that leaves every point where it is).

Rotation symmetry

A figure has rotation symmetry if there is a rotation that takes the figure onto itself. (We don't count rotations using angles such as 0° and 360° that leave every point on the figure where it is.)