



University of Waterloo
Faculty of Mathematics



Centre for Education in
Mathematics and Computing

Junior Math Circles November 11, 2009 2D Geometry I: Summary

Types of Angles

Angle measurement	Name of angle
less than 90°	acute
90°	right
between 90° and 180°	obtuse
180°	straight
between 180° and 360°	reflex

Line Terminology

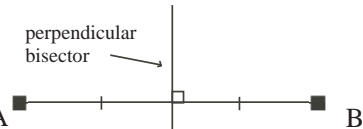
Midpoint: The point on a line segment that divides it into two equal parts.

Bisects: Divides it into two equal parts.

Parallel: Always the same distance apart and never intersect.

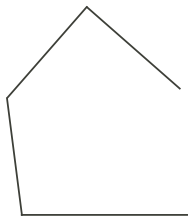
Perpendicular: A right angle.

Perpendicular Bisector: A line that intersects a line segment to form two 90° and divides this line segment into two equal lengths.

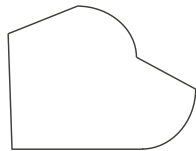


Polygons

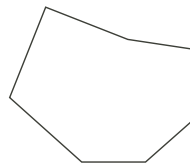
A *polygon* is a two-dimensional closed shape that is formed by straight lines.



NOT a polygon
(is an open shape)



NOT a polygon
(has curved lines)



A polygon

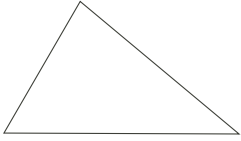
Naming Polygons

Number of Sides	Name
3	Triangle
4	Quadrilateral
5	Pentagon
6	Hexagon
7	Heptagon
8	Octagon
9	Nonagon
10	Decagon

A *regular polygon* is a polygon that has all equal sides and equal angles.

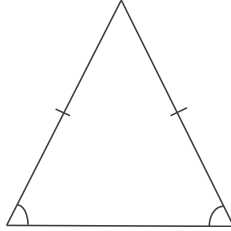
Classifying Triangles

Scalene Triangle



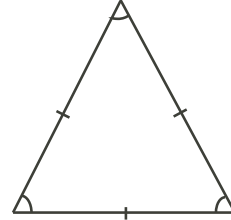
All three sides of the triangle are different lengths.

Isoceles Triangle



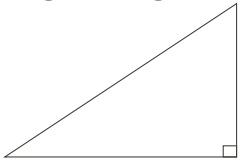
A triangle with only two equal sides. Opposite angles of the equal sides are also equal.

Equilateral Triangle



A triangle with three equal sides. The three angles are also equal. The measure of each interior angle is 60° .

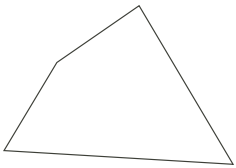
Right-Angle Triangle



A triangle with one right angle.

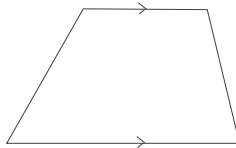
Classifying Quadrilaterals

Quadrilateral



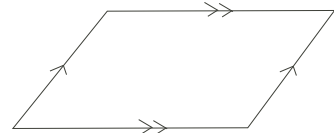
A four sided polygon.

Trapezoid



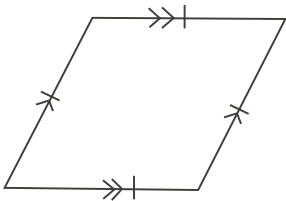
A quadrilateral with only two parallel sides.

Parallelogram



A quadrilateral with both pairs of opposite sides parallel.

Rhombus



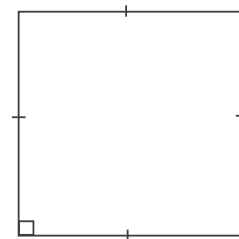
A parallelogram with all sides equal.

Rectangle



A parallelogram where each interior angle is a right angle.

Square



A rectangle with all sides equal.