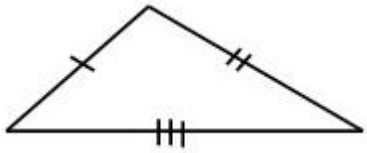
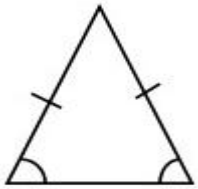
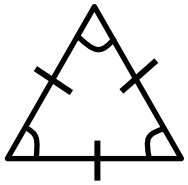
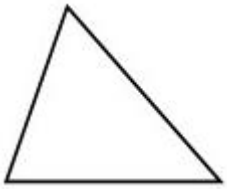
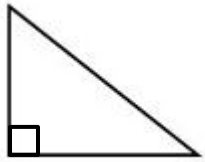
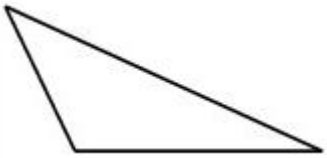
Classifying Triangles

Any triangle can be classified by side length, or by its angle measures

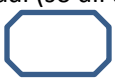
Classifying by Side Length	**Scalene Triangle** All 3 side lengths and angles are different.	**Isosceles Triangle** 2 side lengths (and 2 angles) are the same	**Equilateral Triangle** All side lengths are the same. All angles are 60°
			
Classifying by Angle Measure	**Acute Triangle** All angles are less than 90°	**Right Triangle** One angle is exactly 90°	**Obtuse Triangle** One angle is more than 90°
			

Polygons

A polygon is a closed figure formed by 3 or more line segments

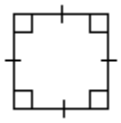
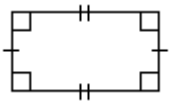
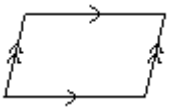
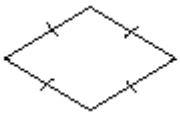
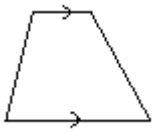
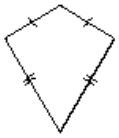
Polygon Name	# of sides	Polygon Name	# of sides	Polygon Name	# of sides
Triangle	3	Hexagon	6	Nonagon	9
Quadrilateral	4	Heptagon	7	Decagon	10
Pentagon	5	Octagon	8		

A **regular polygon** – is a polygon where all side lengths are equal (so all angles are equal too).

e.g.  ← Regular Octagon  ← Irregular Octagon

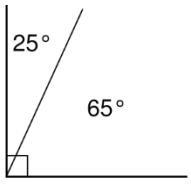
Quadrilaterals

Some important quadrilaterals:

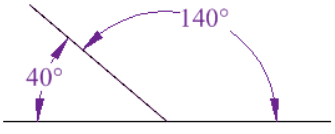
Square  Rectangle  Parallelogram  Rhombus  Trapezoid  Kite 

Complementary and Supplementary

Complementary angles add up to **90°**



Supplementary angles add up to **180°**



Interior Angles

If you add up the interior angles in a polygon, the answer will be constant, depending on the type of polygon:

Type of Polygon	Sum of Interior Angles
Triangle	180°
Quadrilateral	360°
Pentagon	540°
Hexagon	720°

Here's the formula to calculate the total:
Let n be the number of sides the polygon has

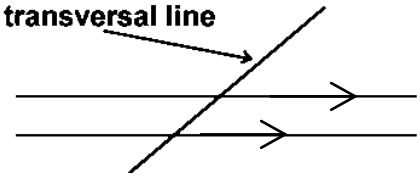
Sum of interior angles = 180(n – 2)

Exterior Angles

For ***any*** polygon, the sum of the exterior angles is ***always*** 360°

Angle Patterns

When two or more ***parallel lines*** intersect with a ***transversal***, angle patterns are created



Property Name	Memory Aid	Description	Diagram
Opposite angles	X Pattern	When two lines intersect, the opposite angles are ***equal***	**A = D** **B = C** **E = H** **F = G**
Alternate Angles	Z Pattern	Alternate angles are ***equal***	**C = F** **D = E**
Corresponding Angles	F Pattern	Corresponding angles are ***equal***	**D = H** **C = G** **E = A** **F = B**
Co-interior Angles	C Pattern	Co-interior angles have a ***sum of 180°*** (they are supplementary)	**D + F = 180°** **C + E = 180°**