PROPERTIES OF
Angles and Triangles

In this unit, we will:

✔ prove properties of angles formed by intersecting lines

✔ prove properties of angles in triangles and other polygons

✔ use properties to solve geometric problems

GEOMETRIC PROPERTIES
A Review:

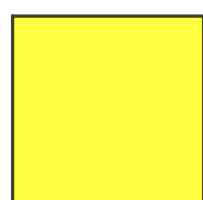Specific names are given to specific shapes.

POLYGONS - Shapes with many sides
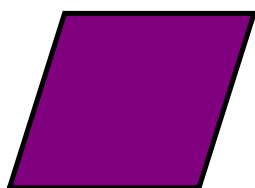   - All shapes with straight sides

triangle	3
quadrilateral	4
pentagon	5
hexagon	6
heptagon	7
octagon	8

Types of QUADRILATERALS

Square

Rectangle

Trapezoid
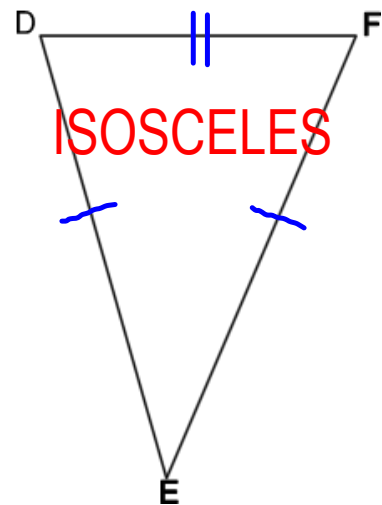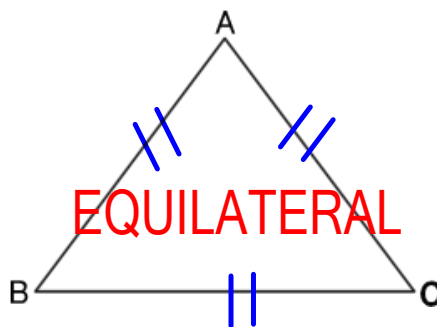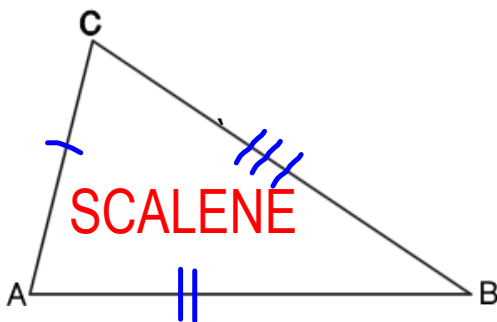
Rhombus

Parallelogram
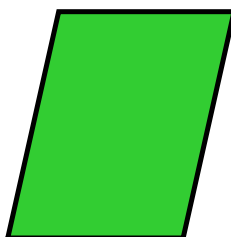
TRIANGLES

Triangles can be classified by the <u>length of their sides</u> or by the <u>measurement of their angles.</u>

Length Of Their Sides:

SCALENE

ISOSCELES

EQUILATERAL

Measurement Of Their Angles:
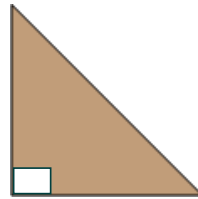
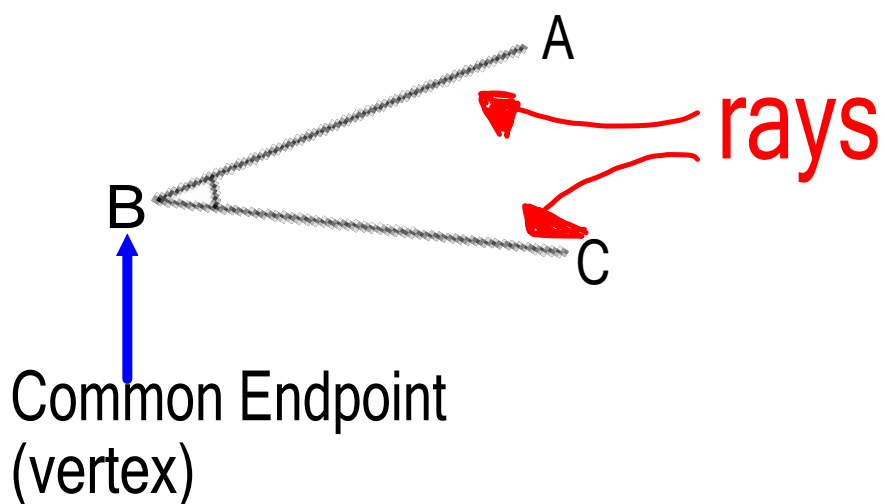Acute Angle
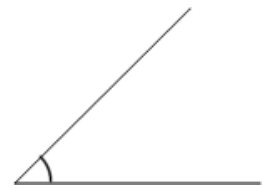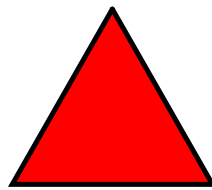
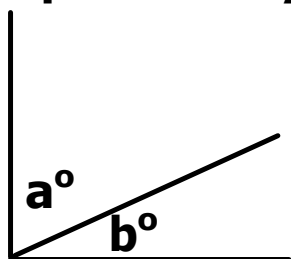Right Angle

Obtuse Angle

PARTS OF ANGLES

A

rays

B

C

Common Endpoint
(vertex)
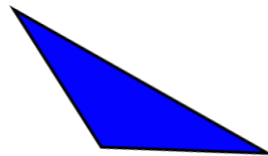
To name an angle we use <ABC, <CBA, or simply <B.

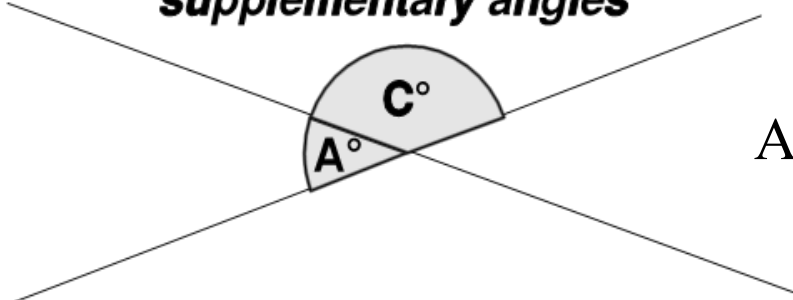# GEOMETRIC PROPERTIES

complementary angles

$A + B = 90$ degrees
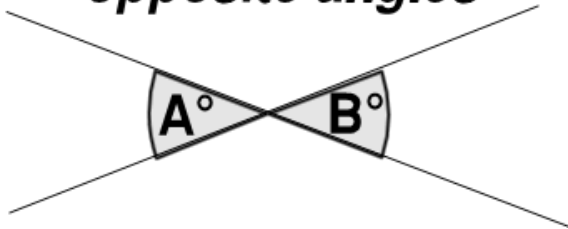
supplementary angles
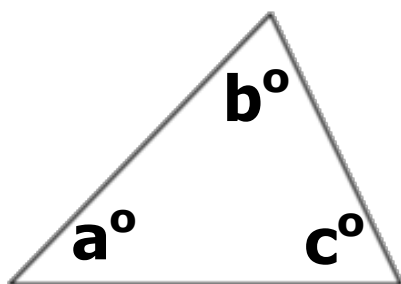
$A + C = 180$ degrees
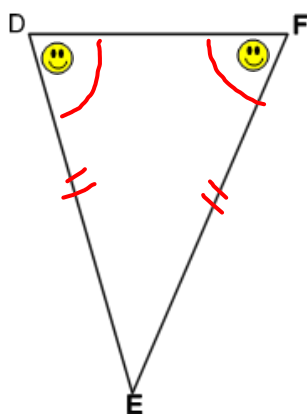
GEOMETRIC PROPERTIES

opposite angles

$A = B$

sum of the angles in a triangle theorem (SATT)

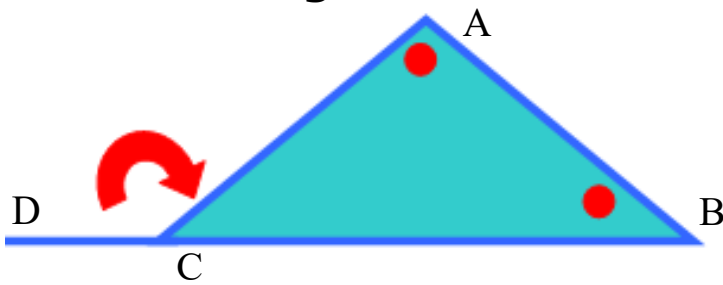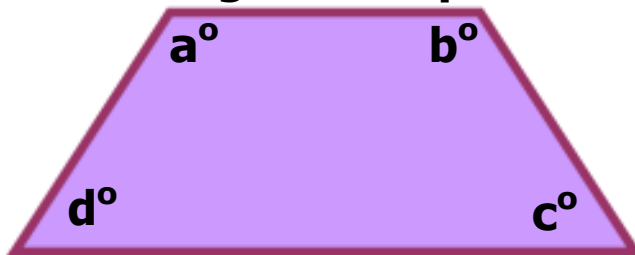$$a + b + c = 180 \text{ degrees}$$

isosceles triangle theorem

Since $DE = FE$, then $\angle D = \angle F$

exterior angle theorem

$$A + B = \angle\, ACD$$

sum of the angles in a quadrilateral

$$a + b + c + d = 360°$$