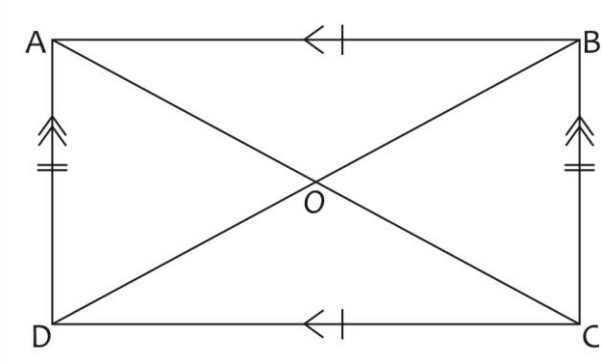
QUADRILATERALS

Quadrilaterals are plane shapes with four (4) sides. There are different kinds of quadrilaterals name: a parallelogram, a kite, a trapezium and other irregular quadrilaterals. Square is the main regular form of a quadrilateral.

Parallelogram

Parallelogram is a quadrilateral with the opposite sides parallel, i.e. if AB||DC and AD||CB, ABCD is a



parallelogram. Also, the opposite sides are equal, i.e. AB = DC, and AD = BC; the opposite angles are equal, i.e. $\angle A = \angle C$ and $\angle B = \angle D$; the allied angles are supplementary i.e. $\angle A + \angle D = 180^{O}$, $\angle A + \angle B = 180^{O}$, $\angle C + \angle D = 180^{O}$, and $\angle C + \angle B = 180^{O}$; and finally, the diagonals bisect each other, i.e. AO = CO and BO = DO.

Different kinds of parallelograms are square, rectangle, and rhombus.

Kite

A kite is a quadrilateral with two-pairs of equal adjacent sides, as such in a kite, the opposite sides are not equal). Although a kite is not a regular quadrilateral because neither the angles nor the sides are equal, however it can be made somewhat regular. The diagonals of a kite cut into

2 isosceles triangles and meet each other at right angles.

Trapezium

A trapezium is a quadrilateral with one pair of opposite sides parallel. Trapezium differs from parallelogram in that it is only one pair of opposite sides that is parallel.

If in a trapezium, the non-parallel sides are equal, then the trapezium is a regular trapezium, or isosceles trapezium. The knowledge of trapezia is useful in dealing with cross-sections of cones, pyramids, prisms and other 3-dimensional objects. The formula for simplifying the area of a trapezium is

$$= \frac{1}{2}(sum\ of\ parallel\ sides) \times height$$