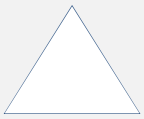
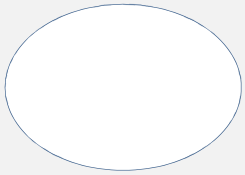
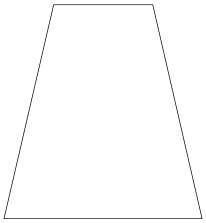
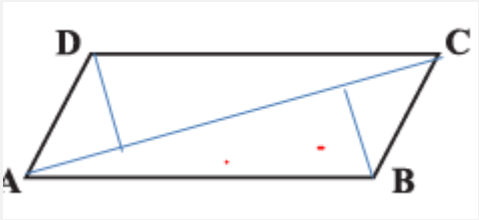
Mensuration

S.no	Term	Description
1	Mensuration	It is branch of mathematics which is concerned about the measurement of length, area and Volume of plane and Solid figure
2	Perimeter	a) The perimeter of plane figure is defined as the length of the boundary b) It units is same as that of length i.e. m, cm, km
3	Area	a) The area of the plane figure is the surface enclosed by its boundary b) It unit is square of length unit. i.e. m^2 , km^2

Shapes where Area and Perimeter are known

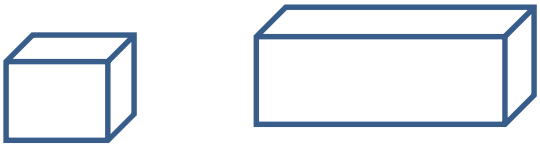
Shapes	Perimeter	Area
Rectangle 	P= 2(L+B) L and B are Length and Breadth of the rectangle	A=L×B
Square 	P=4a a is the side of the square	$A=a^2$
Triangle 	P=Sum of sides	A=(1/2)×(Base)×(Height/Altitude)

Parallelogram 	P=2(Sum of Adjacent sides)	A=(Base) ×(Height)
Circle 	P=2πr r is the radius of the circle	$A=\pi r^2$
Trapezium	P= Sum of length of all the sides	A=(1/2)h(a+b) Half the product of the sum of
		the lengths of parallel sides and the perpendicular distance between them gives the area of trapezium
General Quadrilaterals 	P= Sum of length of all the sides	$A=(1/2)d(h_1+ h_2)$
Rhombus	P=4a	$A= (1/2)\times d_1 \times d_2$ Where d_1 and d_2 are the diagonals of the Rhombus.

Important Terms to remember in case of Solid Figures

Surface Area	**Surface area of a solid is the sum of the areas of its faces**
Lateral Surface Area	The faces excluding the top and bottom) make the lateral surface area of the solid
Volume	Amount of space occupied by a three dimensional object (Solid figure) is called its volume. we use square units to find the area of a two dimensional region. In case of volume we will use cubic units to find the volume of a solid, as cube is the most convenient solid shape (just as square is the most convenient shape to measure area of a region) Volume is sometimes refer as capacity also

Surface Area and Volume of Cube and Cuboid

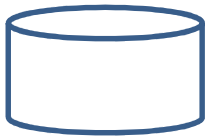


Cube Cuboid

Type	Measurement
Surface Area of Cuboid of Length L, Breadth B and Height H	2(LB + BH + LH).
Lateral surface area of the cuboids	2(L + B) H
Diagonal of the cuboids	$\sqrt{L^2 + B^2 + H^2}$
Volume of a cuboids	LBH
Length of all 12 edges of the cuboids	4 (L+B+H).
Surface Area of Cube of side L	$6L^2$
Lateral surface area of the cube	$4L^2$

Diagonal of the cube	$L\sqrt{3}$
Volume of a cube	L^3

Surface Area and Volume of Right circular cylinder



Radius	**The radius (r) of the circular base is called the radius of the cylinder**
Height	The length of the axis of the cylinder is called the height (h) of the cylinder
Lateral Surface	The curved surface joining the two base of a right circular cylinder is called Lateral Surface.

Type	Measurement
Curved or lateral Surface Area of cylinder	$2\pi rh$
Total surface area of cylinder	$2\pi r\ (h+r)$
Volume of Cylinder	$\pi\ r^2h$