





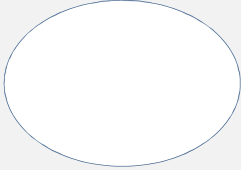
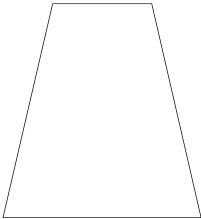
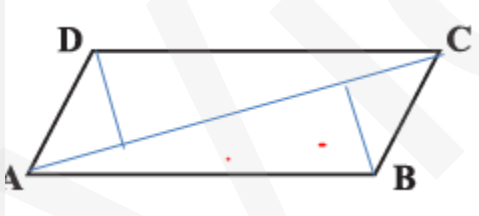
Class 8 Important Formulas

Chapter 9 - 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

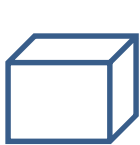
Shapes	Perimeter	Area
Rectangle 	$P= 2(L+B)$ L and B are Length and Breadth of the rectangle	$A=L \times B$
Square 	$P=4a$ a is the side of the square	$A=a^2$
Triangle 	$P=$ Sum of sides	$A=(1/2) \times (\text{Base}) \times (\text{Height/Altitude})$

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

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	<p>Amount of space occupied by a three dimensional object (Solid figure) is called its volume.</p> <p>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)</p> <p>Volume is sometimes refer as capacity also</p>

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	$4L^2$

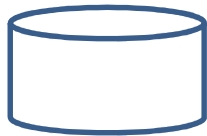
Diagonal of the cube

$$L\sqrt{3}$$

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

$$\pi r^2 h$$