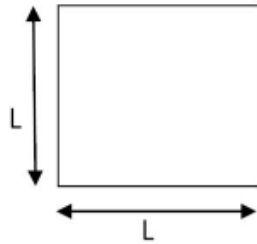
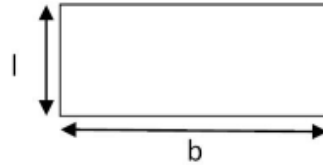


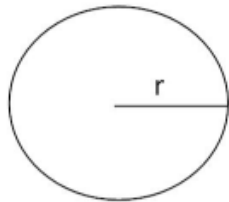
Area and Perimeter of Basic 2-D shapes



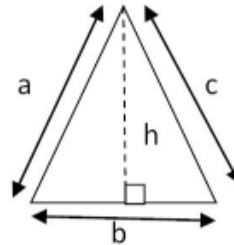
Area = L^2
Perimeter = sum of all sides = $4L$



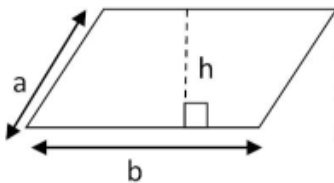
Area = $l \times b$
Perimeter = sum of all sides = $2l + 2b$



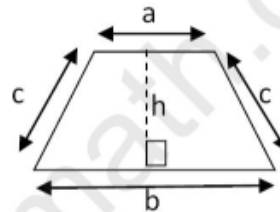
Area = πr^2
Perimeter = $2\pi r$



Area = $\frac{1}{2} \times b \times h$
Perimeter = sum of all sides = $a + b + c$



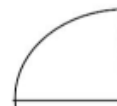
Area = $b \times h$
Perimeter = sum of all sides = $2a + 2b$



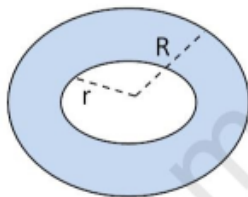
Area = $\frac{1}{2} \times h \times (\text{sum of parallel sides}) = \frac{1}{2} \times h \times (a + b)$
Perimeter = sum of all sides = $a + c + b + c$



Area = $\frac{\pi r^2}{2}$
Perimeter = $\frac{2\pi r}{2} + 2r$



Area = $\frac{\pi r^2}{4}$
Perimeter = $\frac{2\pi r}{4} + 2r$



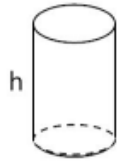
Area = $\pi R^2 - \pi r^2$
Perimeter = sum of all sides = $2\pi R + 2\pi r$

[Formulas in bold are part of formula sheet]

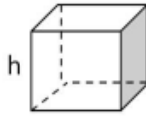
Volume and Surface Area

How to identify a **Prism**?

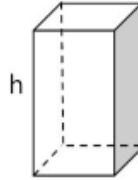
Prisms are 3-dimensional objects with identical top and base, connected by straight line called height of the prism. Example



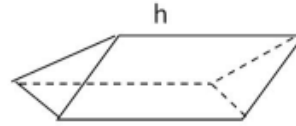
Cylinder



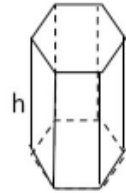
Cube



Cuboid



Triangular base prism



Hexagonal base Prism

Formulas for Prism: [Formulas in bold are part of formula sheet]

Volume = A x L (A is the cross sectional area and L is the length)

Curved Surface Area = Base Perimeter x Height (surface area minus top and base)

Top Open Surface Area = (Base Perimeter x Height) + Base Area

Total Surface Area = (Base Perimeter x Height) + 2(Base Area)

Formulas for Cylinder

Volume = $\pi r^2 h$

Curved Surface Area = $2\pi rh$

Top Open Surface Area = $2\pi rh + \pi r^2$

Total Surface Area = $2\pi rh + 2\pi r^2$



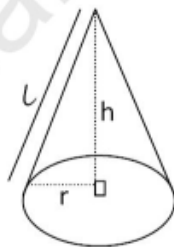
Formulas for Cone:

Volume = $\frac{1}{3}\pi r^2 h$

Curved Surface Area = $\pi r l$

Total Surface Area = $\pi r l + \pi r^2$

Where l is the slant height and note $l^2 = h^2 + r^2$

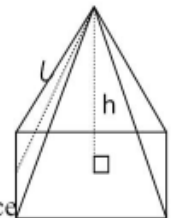


Formulas for Pyramid:

Volume = $\frac{1}{3} \times A \times h$ (A is base area)

Total Surface Area = Area of all surface

(eg in given figure TSA = area of rectangle + area of 4 triangles [height of rectangle is the slant height l])



Formulas for Sphere :

Volume = $\frac{4}{3}\pi r^3$

Surface Area = $4\pi r^2$



Formulas for Hemisphere :

Volume = $\frac{2}{3}\pi r^3$

Curved Surface Area = $2\pi r^2$

Total Surface Area = $2\pi r^2 + \pi r^2$ (or $3\pi r^2$)

