

# GEOMETRY FACTS

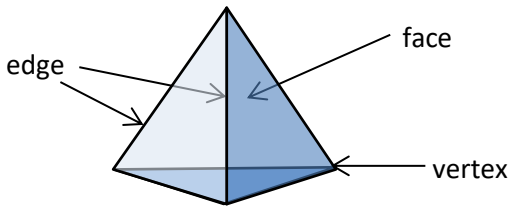
## 3D SHAPES

All 3d shapes can be described in terms of their faces, vertices and edges.

**Face** - a flat or curved surface

**Edge** - line where 2 faces meet

**Vertex** - point where 3 or more edges meet

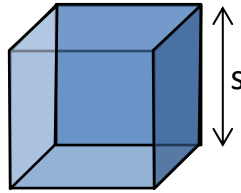


## CUBE

**Volume** =  $s^3$

**Surface area** =  $6s^2$

where  $s$  is the length of one side

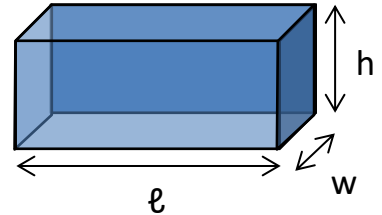


## CUBOID (RECTANGULAR PRISM)

**Volume** =  $l \times w \times h$

**Surface area** =  $2lh + 2lw + 2wh$

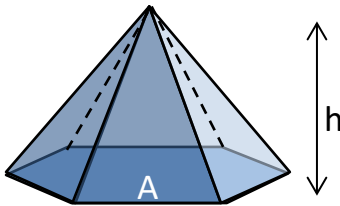
where  $l$  = length,  $w$  = width,  $h$  = height



## PYRAMIDS

**Volume of a general pyramid** =  $\frac{1}{3} Ah$

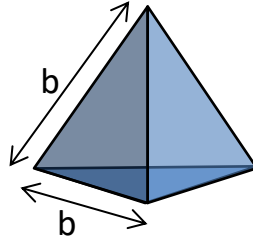
where  $A$  = base area and  $h$  = height



## REGULAR TETRAHEDRON

**Volume** =  $\frac{b^3}{6\sqrt{2}}$

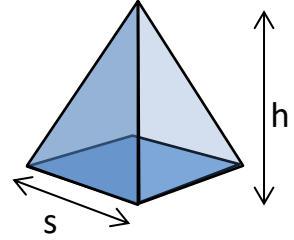
**Surface area** =  $\sqrt{3}b^2$



## SQUARE PYRAMID

**Volume** =  $\frac{1}{3} s^2 h$

**Surface area** =  $s^2 + 2sh$

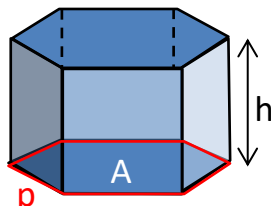
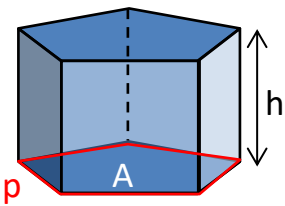


## PRISMS

**Volume of any prism** =  $Ah$

**Surface area of a closed prism** =  $2A + (h \times p)$

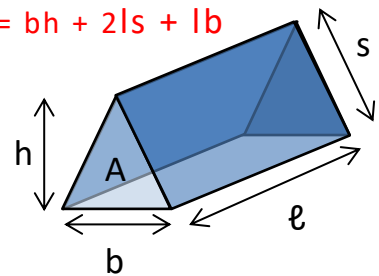
where  $A$  = base area,  $h$  = height,  $p$  = base perimeter



## TRIANGULAR PRISM

**Volume** =  $A l$  or  $\frac{1}{2} b h l$

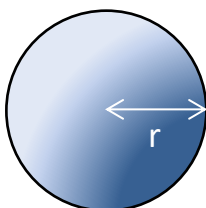
**Surface area** =  $bh + 2ls + lb$



## SPHERES

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

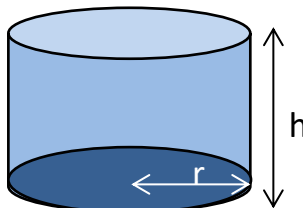
**Surface area** =  $4\pi r^2$



## RIGHT CYLINDER

**Volume** =  $\pi r^2 h$

**Surface area** =  $2\pi r (r + h)$



## RIGHT CIRCULAR CONE

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

**Surface area** =  $\pi r (r + s)$

