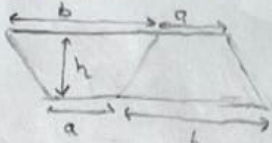


# Area + Perimeter

## Area

rectangle / square =  $b \times h$

trapezium =  $\frac{1}{2}(a+b)h$



triangle =  $\frac{1}{2}(b \times h)$

## Semi-circle

$$A = \pi r^2 \div 2$$

$$\text{Perimeter} = \pi d \div 2$$



## Quarter-circle

$$A = \pi r^2 \div 4$$

$$\text{Perimeter} = \pi d \div 4$$



## Perimeter

Add all sides together.

## Circles

$$C = \pi d \text{ (or } 2\pi r) \quad A = \pi r^2$$

Cherry pies are delicious, apple pies are too.

A prism is a 3D object with 2 identical ends. It has the same cross section all across its length.

Volume of a prism =

Cross section  $\times$  length



$$\text{Cylinder} = 2\pi r \times h$$

$$\text{Cone} = \pi r^2$$

Times  $\odot$  by 2,  $\square$  by 1.

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

Curved surface area of a cone =  $\pi r L$

Surface area =  $\pi r L + \pi r^2$

## Area

## Converting units

## Volume

Area = Square the scale factor

$$1\text{m} \begin{matrix} \xrightarrow{\times 100} 100\text{cm} \\ \xrightarrow{\times 100} 100\text{cm} \end{matrix}$$

$$\text{km}^2 \rightarrow \text{m}^2 = \times 1000^2 \quad \text{m}^2 \rightarrow \text{km}^2 = \div 1000^2$$

$$\text{m}^2 \rightarrow \text{cm}^2 = \times 100^2 \quad \text{cm}^2 \rightarrow \text{m}^2 = \div 100^2$$

$$\text{cm}^2 \rightarrow \text{mm}^2 = \times 10^2 \quad \text{mm}^2 \rightarrow \text{cm}^2 = \div 10^2$$

Volume = Cube the scale factor

$$\text{km}^3 \rightarrow \text{m}^3 = \times 1000^3 \quad \text{m}^3 \rightarrow \text{km}^3 = \div 1000^3$$

$$\text{m}^3 \rightarrow \text{cm}^3 = \times 100^3$$

$$\text{cm}^3 \rightarrow \text{m}^3 = \div 100^3$$

$$\text{cm}^3 \rightarrow \text{mm}^3 = \times 10^3$$

$$\text{mm}^3 \rightarrow \text{cm}^3 = \div 10^3$$

# 3D Shapes (topic 11)

Preview from Notesale.co.uk Page 1 of 1

## Cone

A cone is  $\frac{1}{3}$  (a third) of the volume of a cylinder with the same radius.

$$\text{Cylinder} = \pi r^2 \times h$$

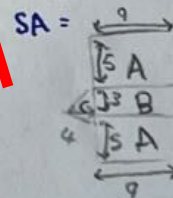
$$\text{Cone} = \frac{1}{3}\pi r^2 \times h$$



Surface area: is the total area of the outside of a 3D shape.

$$\text{Volume} = \frac{4 \times 3}{2} = 6$$

$$6 \times 9 = 54 \text{cm}^3$$



SA =

$$A = 5 \times 9 = 45$$

$$B = 3 \times 9 = 27$$

$$C = \frac{4 \times 3}{2} = 6$$

$$A \times 2 = 90$$

$$B = 27$$

$$C \times 2 = 12$$

$$= 129 \text{cm}^2$$

## Spheres

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

$$\text{SA} = 4\pi r^2$$



## Semi-spheres

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

$$\text{SA} = \underbrace{4 \times \pi \times r^2 \div 2}_{\text{curved surface}} + \underbrace{\pi r^2}_{\text{flat surface}}$$

- Learn
- Practice
- Practice more
- Understand
- Test

Good luck!!!