Area of a Circle

\[ \text{Area} = \pi r^2 \]

\[ r = \text{Radius of Circle} \]

\[ \text{Area} = \pi \times 8^2 \]

\[ \text{Area} = \pi \times 64 \]

\[ \text{Area} = 201 \text{cm}^2 \]
Area = \( Length \times Breadth \)

\[
\text{Area} = L \times B
\]

\[
A = 5 \times 4
\]

\[
A = 20\, m^2
\]
Area of a Triangle

\[ \text{Area} = \frac{1}{2} \text{length of base} \times \text{Perpendicular height} \]

\[ \text{Area} = \frac{1}{2} B \times H \]

\[ \text{Area} = \frac{1}{2} 6 \times 5 \]

\[ \text{Area} = 3 \times 5 \]

\[ \text{Area} = 15 \text{m}^2 \]
Area of a Trapezium

\[ \text{Area} = \frac{\text{Top} + \text{Bottom}}{2} \times \text{Height} \]

\[ A = \frac{3+7}{2} \times 5 \]
\[ A = 5 \times 5 \]
\[ A = 10 \text{ m}^2 \]
Perimeter or Circumference of a Circle

\[ \text{Circumference} = 2\pi r \]

\( r = \text{Radius of Circle} \)

\[ \text{Circumference} = 2\times \pi \times 8 \]

\[ \text{Circumference} = 50 \text{cm} \]
\[ \text{Per} = 5 + 4 + 5 + 4 \]

\[ \text{Per} = 18 \text{m} \]
Example 1: Find the unknown.

SOH

\[ \sin A = \frac{\text{Opposite}}{\text{Hypotenuse}} \]

\[ \sin A = \frac{3}{5} \]

\[ \sin A = 0.6 \]

\[ \therefore A = \sin^{-1} 0.6 \]

\[ A = 36.87^\circ \]
Example 2: TOA

\[ \tan A = \frac{\text{Opposite}}{\text{Adjacent}} \]

\[ \tan 12^\circ = \frac{a}{40m} \]

\[ \therefore a = \tan 12^\circ \times 40 \]

\[ \therefore a = 8.5m \]
Example 3: CAH

\[ \cos A = \frac{\text{Adjacent}}{\text{Hypotenuse}} \]

\[ \cos 30^\circ = \frac{12}{c} \]

\[ \therefore c = \frac{12}{\cos 30^\circ} \]

\[ \therefore c = 13.86\text{cm} \]
\[ \sin A = \frac{\text{opposite}}{\text{hypotenuse}} = \frac{a}{c} \]

\[ \cos A = \frac{\text{adjacent}}{\text{hypotenuse}} = \frac{b}{c} \]

\[ \tan A = \frac{\text{opposite}}{\text{adjacent}} = \frac{a}{b} = \frac{\sin A}{\cos A} \]
Volume and Capacity

1 litre = 10 cm$^3$ = 1000 cubic centimetres = 0.001 cubic metres

so...

1 cubic metre = 1000 litres.

Small amounts of liquid are often measured in millilitres, where

1 millilitre = 0.001 litres = 1 cubic centimetre.
Volume of a Cylinder

Volume = Area of Base $\times$ Height

$V = \pi r^2 \times H$

$V = \pi 6^2 \times 9$

$V = 113 \times 9$

$V = 1017 \text{cm}^3$
Volume of Pyramid

\[ Volume = \frac{1}{3} \text{Area of Base} \times \text{Height} \]

\[ V = \frac{1}{3} \text{area of base} \times H \]

\[ V = \frac{1}{3} \times 7 \times 6 \times 5 \]

\[ V = 14 \times 5 \]

\[ V = 70 \text{ cm}^3 \]
Volume of a Rectangular Prism

\[ V = \text{Length} \times \text{Breadth} \times \text{Height} \]

Note: A cube is a uniform rectangular prism

\[ V = L \times B \times H \]

\[ V = 6 \times 3 \times 2 \]

\[ V = 36cm^2 \]
Volume of a Sphere

\[ Volume = \frac{4\pi r^3}{3} \]

\[ V = \frac{4\pi r^3}{3} \]

\[ V = \frac{4\pi (5)^3}{3} \]

\[ V = \frac{1570}{3} \]

\[ V = 523 \text{ mm}^3 \]