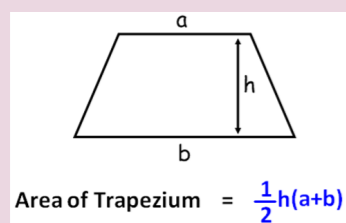
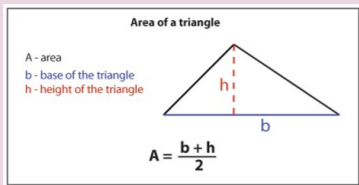
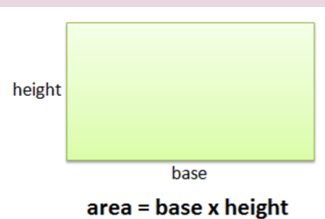


Area

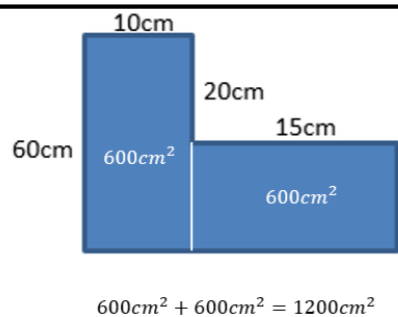
Formulas



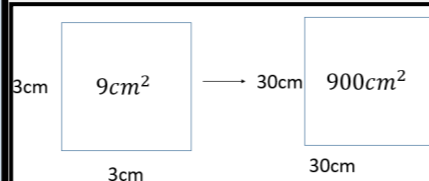
Compound Area

Find the area of the Compound shape

- 1) Split the shape up
- 2) Find any missing sides
- 3) Calculate the area of both shapes
- 4) Add the areas together



Converting Units



If the length increases by a scale factor k , the area increases by this squared, i.e. k^2

Convert $5m^2$ to cm^2

$1m = 100cm$
 $100^2 = 10,000$
 $5 \times 10,000 = 50,000cm^2$

- Steps:
 Find the conversion scale factor
 Square it
 Multiply by the original

Bounds

The upper bound of a number is the highest value before rounding.
 The lower bound of a number is the lowest value before rounding.

A plank of wood is 2.4cm to one decimal place

Find the upper and lower bound

Lower Bound = 2.35 Upper Bound = 2.45

Bounds always end in 5

Bounds

Multiplying with Bounds

The upper bound of a multiplication is always the two upper bounds multiplied together
 The lower bound of a multiplication is always the two lower bounds multiplied together

Dividing with Bounds

The upper bound of a fraction is always

$$\frac{\text{Upper bound of the numerator}}{\text{Lower Bound of the denominator}}$$

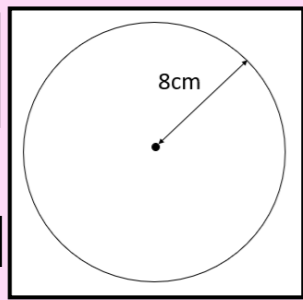
The lower bound of a fraction is always

$$\frac{\text{Lower bound of the numerator}}{\text{Upper Bound of the denominator}}$$

Unit 7: Area and Volume

Area of a circle

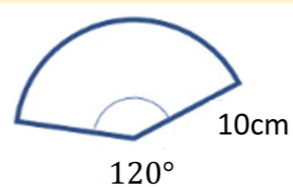
The formula for the area of the circle is πr^2



$8^2 \times \pi = 201.1cm^2$

Area of a sector

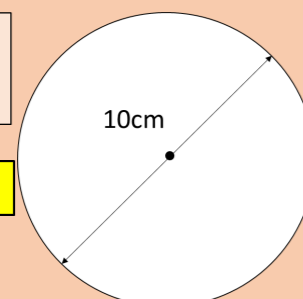
$$\frac{\theta}{360} \times \pi r^2$$



$\frac{120}{360} \times 100\pi = 104.7cm^2$

Circumference of a circle

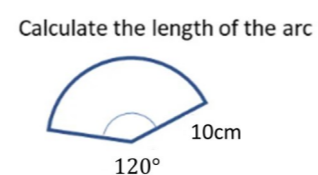
The formula for the circumference of the circle is πd



$10 \times \pi = 314cm$

Arc Length

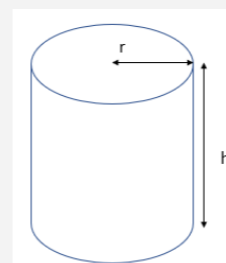
$$\frac{\theta}{360} \times \pi d$$



$\frac{120}{360} \times 20\pi = 20.9cm$

The formula for the volume of a cylinder is $\pi \times r^2 \times h$

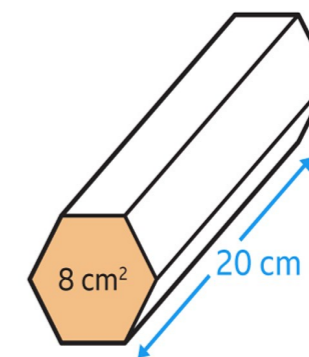
Cylinder



The formula for the surface area of a cylinder is

$$A = 2\pi r h + 2\pi r^2$$

Volume of a prism = area of cross-section \times length



$8 \times 20 = 160$
 Volume = $160 cm^3$

Circles