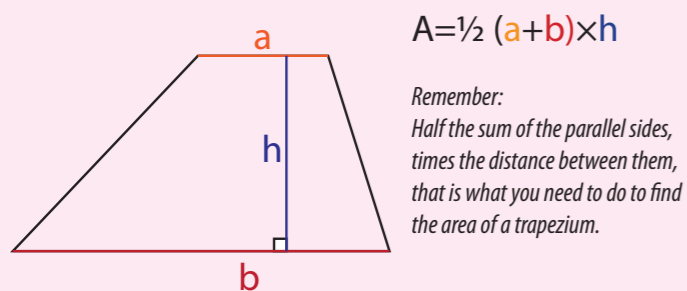
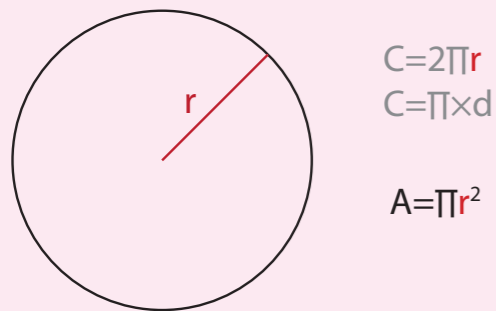
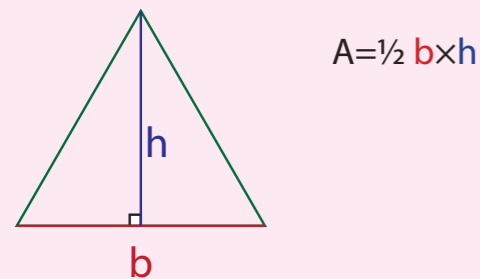
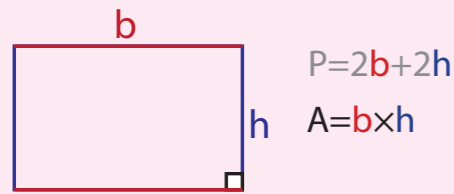
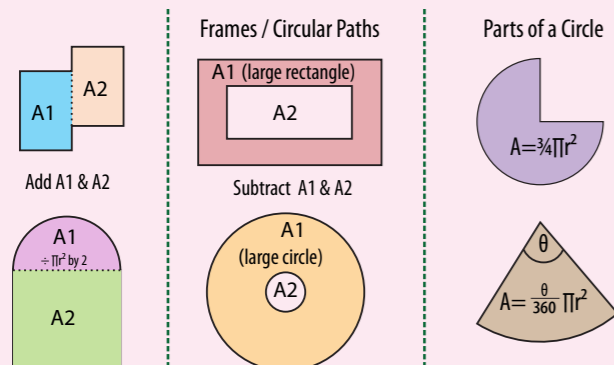


## Perimeter / Area

Remember that the unit for perimeter is a length (eg: cm). The units for area are squared (eg: cm<sup>2</sup>)

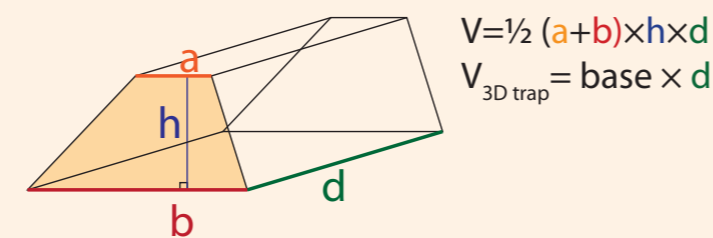
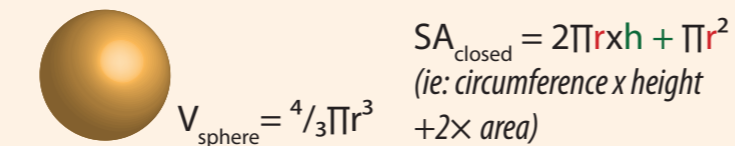
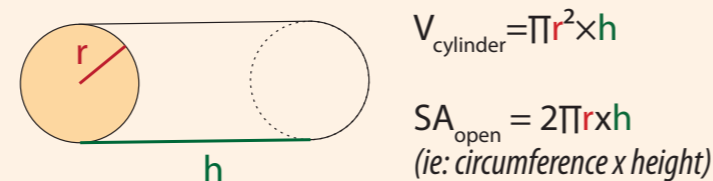
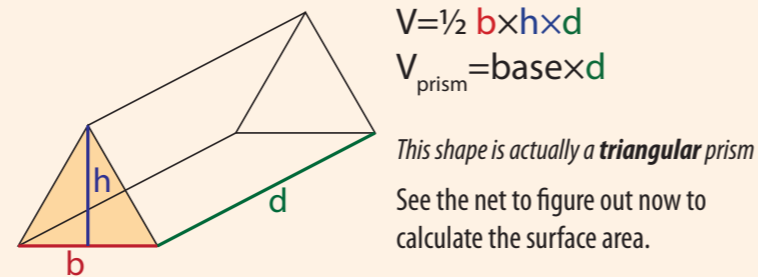
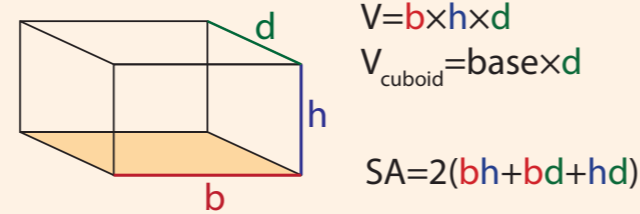


## Compound Shapes



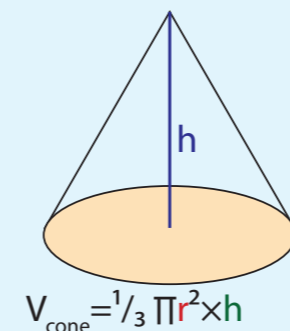
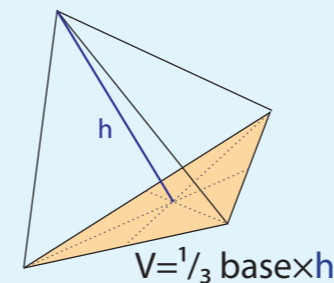
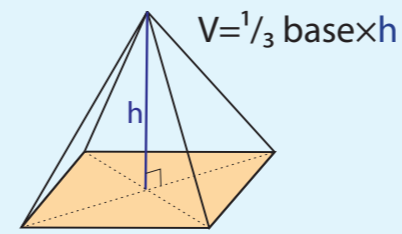
## Volume & Surface Area

To find the volume of a prism, multiply the base area by the depth. Remember that your unit is cubed (eg: cm<sup>3</sup>). Surface Area (SA) is measured in units<sup>2</sup>.



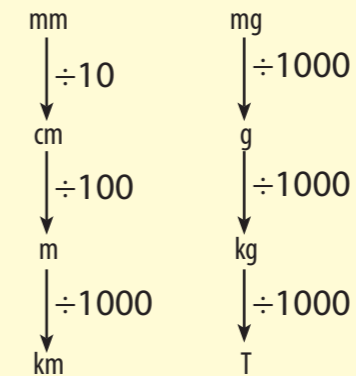
## Pyramids / Cones

To find the volume of a pyramids / cones, simply find the volume of the parent shape and divide it by 3



## Units Conversion

Create charts to help you do this. Start with the smallest unit and then ÷ down to work your way from one unit to the next.



## Memorise Us!

1 hectare (ha) = 10 000m<sup>2</sup>  
1 cm<sup>3</sup> = 1 mL  
1000cm<sup>3</sup> = 1 L  
1 m<sup>3</sup> = 1,000L

## Area / Volume Units

When calculating area / volume, check that the units you are given match the units required in the answer. Its easier to convert your units before you x!

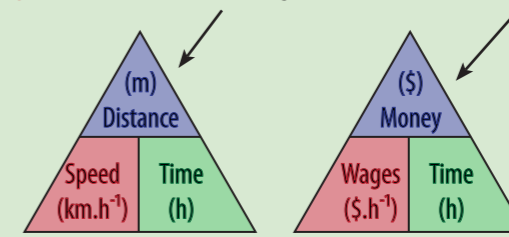
Eg: If the units are given in cm and the answer should be in m<sup>3</sup>, change all units from cm to m before you multiply.

## Rates

Are used to compare quantities in different units. The word "per" means divide. To work out rates, look at the units provided and then make a triangle to help solve the problem.

Speed = Distance ÷ Time (eg km.h<sup>-1</sup>)

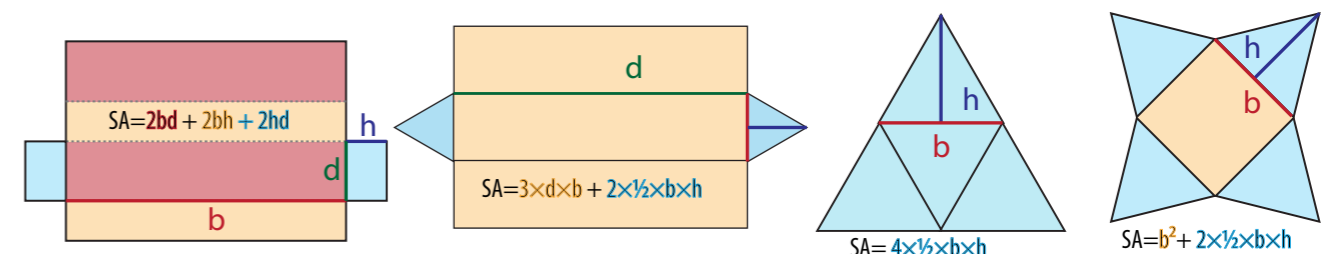
Wages = \$\$ ÷ Time (eg: \$.h<sup>-1</sup>)



When doing rates problem, check that the units you are given match the units required in the answer. If they don't, convert the units to what they should be before dividing.

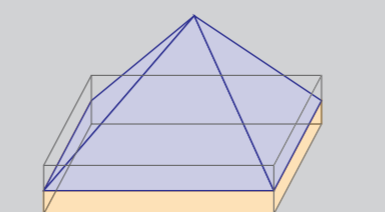
## Nets - to Work out Surface Area

Nets are very useful for working out the surface area of a shape. Note which dimensions you need to work out the SA's from the nets below.



## 3D Modelling

Your model should incorporate at least two 3D shapes. Good models may incorporate hemispheres, cones, and pyramids. Below are some examples.



Sand in trailer made from cuboid and square based pyramid.

## Limitations

No model is perfect. You will need to discuss the limitations of your model to get excellence. Here are some points to get you started.

- Most models assume perfect shapes, in reality the shapes are not perfect.
- Most models assume no wastage
- Most models use approximations
- Model may not fit actual shape perfectly. Is your prediction over or under because of this?

## Limits of Accuracy

Given measurements may be rounded. For example, if I say the temperature is 25°, the actual temperature could be as low as 24.5° or as high as 25.4999°. Both would round to 25°. We would write this as 24.5° ≤ x < 25.5°, where x is the actual temperature. Note the '<'. If 25.5° is rounded it becomes 26°, so the temperature must be less than 25.5°

The actual value of a given measurement is within a range of half a unit on either side.  
When x=2cm, Limit of Accuracy is 1.5cm ≤ x < 2.5cm  
When x=2.5cm, Limit of Accuracy is 2.45cm ≤ x < 2.55 cm  
A crowd of 10,000 would be written as 9,500 ≤ x < 10,500  
\$500, to the nearest \$10 would be \$495 ≤ x < \$505