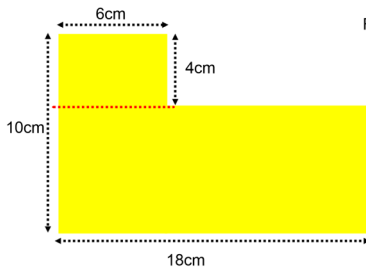


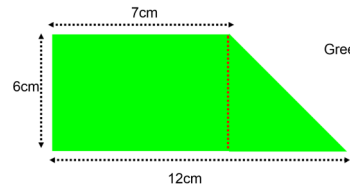
Lots of SHAPE 5 ANSWERS



Find the area

There are other ways to find the total area but you will get the same answer.

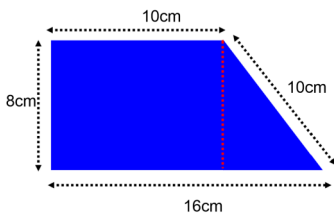
Small rectangle = $6 \times 4 = 24\text{cm}^2$
 Big rectangle = $18 \times 6 = 108\text{cm}^2$
 Total area = 132cm^2



Green area?

There are other ways to find the total area but you will get the same answer.

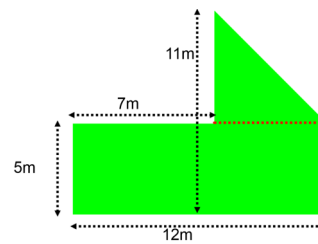
Rectangle = $12 \times 6 = 72\text{cm}^2$
 Triangle = $5 \times 6 \div 2 = 15\text{cm}^2$
 Total area = 87cm^2



Area?

There are other ways to find the total area but you will get the same answer.

Rectangle = $8 \times 10 = 80\text{cm}^2$
 Triangle = $6 \times 8 \div 2 = 24\text{cm}^2$
 Total area = 104cm^2

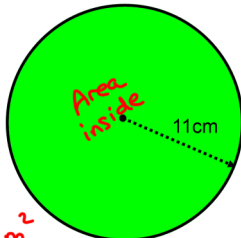


There are other ways to find the total area but you will get the same answer.

Big Rectangle = $12 \times 5 = 60\text{m}^2$
 Triangle = $5 \times 6 \div 2 = 15\text{m}^2$
 Total area = 75m^2

Find the area of this circle. Give your answer to 1 decimal place.
 (Use π button or 3.14)

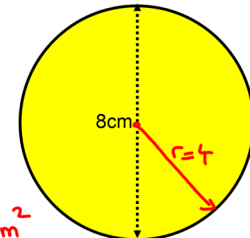
$A = \pi \times r \times r$
 $A = \pi \times 11 \times 11$
 $A = 121\pi$
 $A = 380.1\text{cm}^2$



Remember units!

Find the area of this circle. Give your answer to 1 decimal place.
 (Use π button or 3.14)

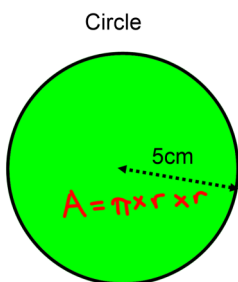
$A = \pi \times r \times r$
 $A = \pi \times 4 \times 4$
 $A = 16\pi$
 $A = 50.3\text{cm}^2$



diameter = 8
 $r = 4\text{cm}$

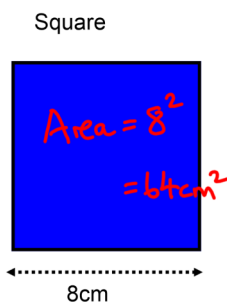
Don't forget units!

Which shape has the greatest area? (Use π button or 3.14)



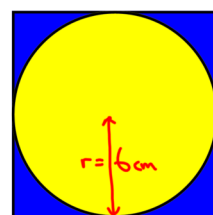
$A = \pi \times r \times r$
 $A = \pi \times 5 \times 5$
 $A = 78.5\text{cm}^2$

Ans circle has bigger area



Area = 8^2
 $= 64\text{cm}^2$

A circle is cut out off a piece of metal. It touches all the sides.
 What is the area of the metal left over? (Use π button or 3.14)

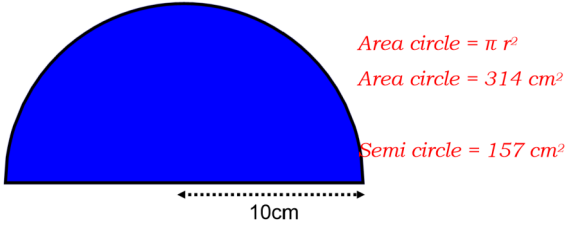


Circle
 $A = \pi \times 6 \times 6$
 $A = \pi \times 6^2$
 $A = 113.1\text{cm}^2$

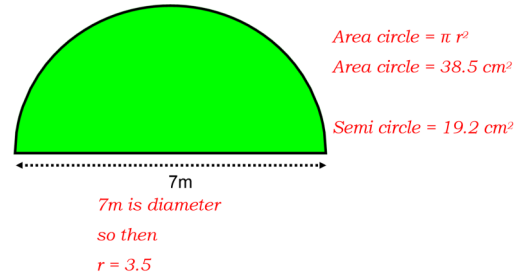
Blue left over = $144 - 113.1$
 $= 30.9\text{cm}^2$

Square
 12
 12
 $\text{Area} = 12^2 = 144$

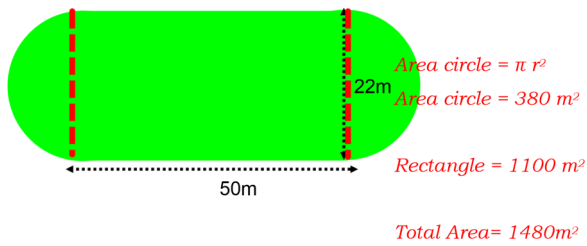
What is the area of this semi-circle? (Use π button or 3.14)



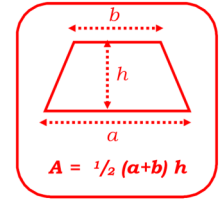
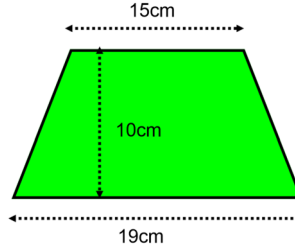
What is the area of this semi-circle? (Use π button or 3.14)



What is the area? (Use π button or 3.14)

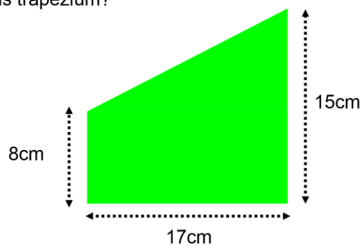
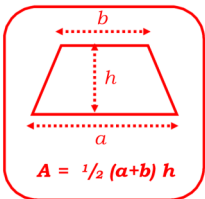


What is the area of this trapezium?



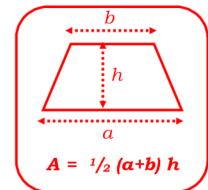
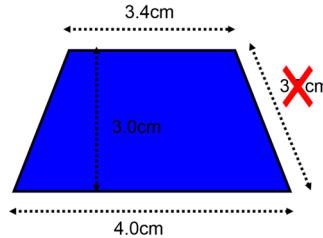
$A = \frac{1}{2} (15+19) 10$
 $A = \frac{1}{2} (34) 10$
 $A = 170 \text{ cm}^2$ ← Don't forget the units!

What is the area of this trapezium?



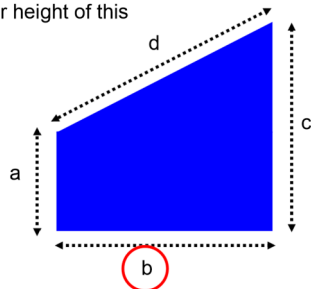
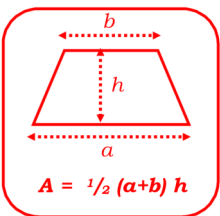
$A = \frac{1}{2} (8+15) 17$
 $A = \frac{1}{2} (23) 17$
 $A = 195.5 \text{ cm}^2$ ← Don't forget the units!

What is the area of this trapezium?



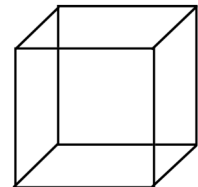
$A = \frac{1}{2} (3.4 + 4) 3$
 $A = \frac{1}{2} (7.4) 3$
 $A = 11.1 \text{ cm}^2$ ← Don't forget the units!

Which is the perpendicular height of this trapezium?



This has been turned on the side.

A solid gold cube has side length of 3.7cm. What is the volume of this gold cube?



Volume = length³
 Volume = 3.7^3
 Volume = 50.653 cm^3

Don't forget the units

A solid gold cube has side length of 8cm.
What is the volume of this gold cube?

$$\text{Volume} = \text{length}^3$$

$$\text{Volume} = 8^3$$

$$\text{Volume} = 512 \text{ cm}^3$$

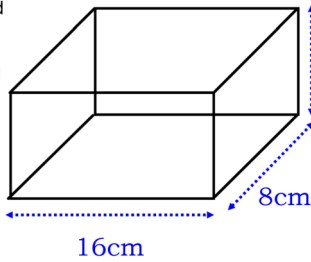
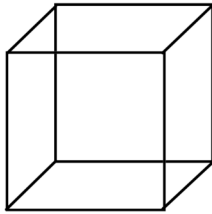
It is melted down to make a cuboid like the picture.

What is the height of the new solid gold cuboid?

$$V = l w h$$

$$512 = 16 \times 8 \times h$$

$$4\text{cm} = h$$



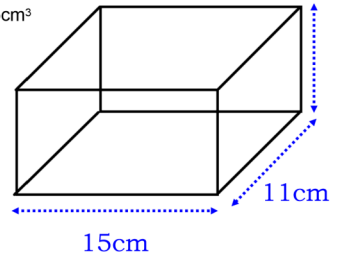
The volume of this cuboid is 1485cm³

What is the height ?

$$V = l w h$$

$$1485 = 15 \times 11 \times h$$

$$9\text{cm} = h$$

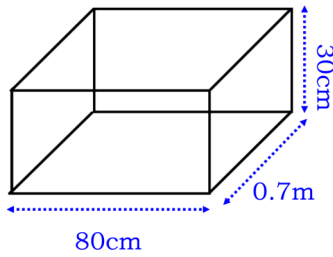


Find the volume of this cuboid.
State the correct units.

$$\text{Volume} = l \times w \times h$$

$$\text{Volume} = 0.8 \times 0.7 \times 0.3$$

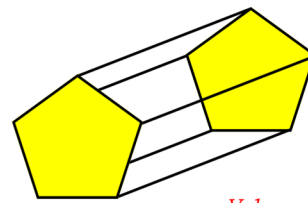
$$\text{Volume} = 0.168 \text{ m}^3$$



$$\text{Volume} = l \times w \times h$$

$$\text{Volume} = 80 \times 70 \times 30$$

$$\text{Volume} = 168000 \text{ cm}^3$$



This prism has a cross-sectional area of 22cm².

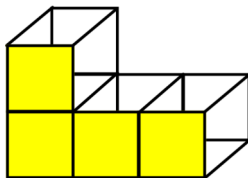
The length is 15cm.

What is the volume?

$$\text{Volume} = \text{Area of cross section} \times h$$

$$\text{Volume} = 22 \times 15$$

$$\text{Volume} = 330 \text{ cm}^3$$



Each square is 49cm²

Yellow area is 196cm²

This prism is made up from cubes with a side length of 7cm.

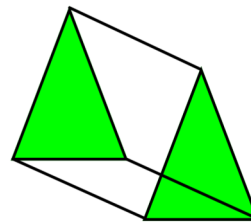
Find the yellow cross-sectional area.

Then find the volume.

$$\text{Volume} = \text{Area of cross section} \times h$$

$$\text{Volume} = 196 \times 7\text{cm}$$

$$\text{Volume} = 1372 \text{ cm}^3$$



This prism has a cross-sectional area of 30cm².

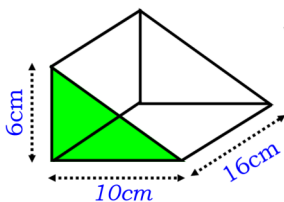
The length is 15cm.

What is the volume?

$$\text{Volume} = \text{Area of cross section} \times h$$

$$\text{Volume} = 30 \times 15$$

$$\text{Volume} = 450 \text{ cm}^3$$



What is the volume of this prism?

$$\text{Area} = bh \div 2$$

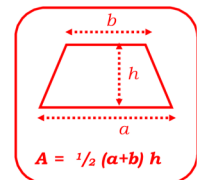
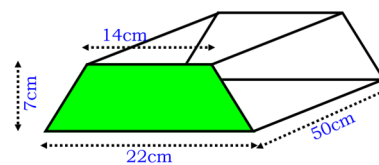
$$\text{Area} = 10(6) \div 2$$

$$\text{Area} = 30 \text{ cm}^2$$

$$\text{Volume} = \text{Area of cross section} \times h$$

$$\text{Volume} = 30 \times 16$$

$$\text{Volume} = 480 \text{ cm}^3$$



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

$$\text{Area} = \frac{1}{2} (14+22)7$$

$$\text{Area} = 126 \text{ cm}^2$$

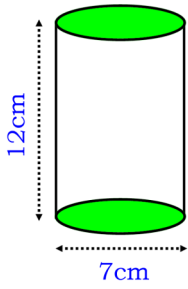
Find the cross-sectional area.

Then find the volume stating the correct units.

$$\text{Volume} = \text{Area of cross section} \times h$$

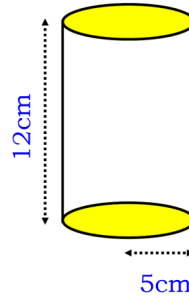
$$\text{Volume} = 126 \times 50$$

$$\text{Volume} = 6300 \text{ cm}^3$$



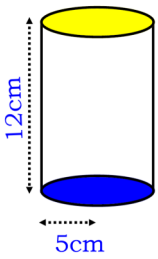
What is the volume of this cylinder?
Use π button or $\pi=3.14$

$$\begin{aligned} \text{radius } r &= 3.5\text{cm} \\ \text{height } h &= 12\text{cm} \\ \text{Volume} &= \pi r^2 h \\ &= \pi (3.5)^2 12 \\ &= 147 \pi \text{ cm}^3 \\ &= 460 \text{ cm}^3 \text{ (2sig fig)} \end{aligned}$$



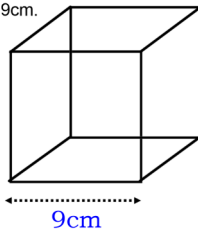
What is the volume of this cylinder?
Use π button or $\pi=3.14$

$$\begin{aligned} \text{radius } r &= 5\text{cm} \\ \text{height } h &= 12\text{cm} \\ \text{Volume} &= \pi r^2 h \\ &= \pi (5)^2 12 \\ &= 300 \pi \text{ cm}^3 \\ &= 940 \text{ cm}^3 \text{ (2sig fig)} \end{aligned}$$



Which shape has the bigger volume?
Cylinder or Cube of side length 9cm.

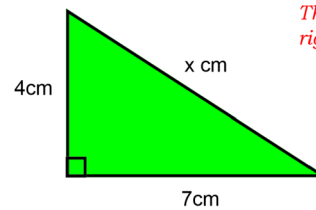
$$\begin{aligned} \text{Volume} &= \pi r^2 h \\ &= \pi (5)^2 12 \\ &= 300 \pi \text{ cm}^3 \\ &= 940 \text{ cm}^3 \text{ (2sig fig)} \end{aligned}$$



$$\begin{aligned} \text{Volume} &= s^3 \\ &= 9^3 \\ &= 729 \text{ cm}^3 \end{aligned}$$

The cylinder has bigger volume

Find the value of x to 1 decimal place.

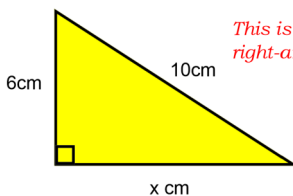


This is Pythagoras' because it is a right-angled triangle and 3 sides

$$\begin{aligned} a^2 + b^2 &= h^2 \\ 4^2 + 7^2 &= x^2 \\ 16 + 49 &= x^2 \\ 65 &= x^2 \\ \sqrt{65} &= x \end{aligned}$$

Answer $x=8.1$ (to 1 dec pl)

Find the value of x to 1 decimal place.



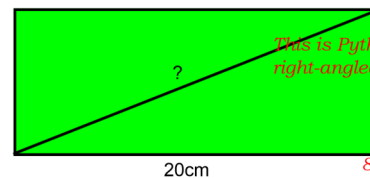
This is Pythagoras' because it is a right-angled triangle and 3 sides

$$\begin{aligned} a^2 + b^2 &= h^2 \\ x^2 + 6^2 &= 10^2 \\ x^2 + 36 &= 100 \\ x^2 &= 100 - 36 \\ x^2 &= 64 \end{aligned}$$

Answer $x=8$

This rectangle measures 20cm by 8cm.

What is the diagonal distance?



This is Pythagoras' because it is a right-angled triangle and 3 sides

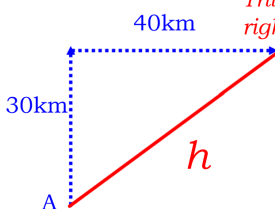
$$\begin{aligned} a^2 + b^2 &= h^2 \\ 8^2 + 20^2 &= x^2 \\ 64 + 400 &= x^2 \\ 464 &= x^2 \\ \sqrt{464} &= x \end{aligned}$$

$x=21.5$ (to 1 dec pl)

Ben sails from point A

He sails 30km North and then 40km East.

How far is he away from A as the crow flies?



This is Pythagoras' because it is a right-angled triangle and 3 sides

$$\begin{aligned} a^2 + b^2 &= h^2 \\ 40^2 + 30^2 &= x^2 \\ 1600 + 900 &= x^2 \\ 2500 &= x^2 \\ \sqrt{2500} &= x \end{aligned}$$

Answer $x=50 \text{ km}$