

Volume and Area of 3D shapes Past Paper Questions

GCSE Edexcel - Calculator

1.

Anne wants to fill 12 hanging baskets with compost.

Each hanging basket is a hemisphere of diameter 40 cm.

Anne has 4 bags of compost.

There are 50 litres of compost in each bag.

Has Anne got enough compost to fill the 12 hanging baskets?



hanging basket

(Total for Question 1 is 4 marks)

2.

The diagram shows a swimming pool in the shape of a prism.

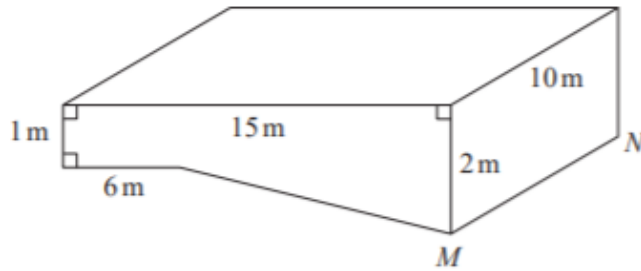


Diagram **NOT**
accurately drawn

The swimming pool is empty.

The swimming pool is filled with water at a constant rate of 50 litres per minute.

- (a) Work out how long it will take for the swimming pool to be completely full of water.
Give your answer in hours.
($1 \text{ m}^3 = 1000 \text{ litres}$)

_____ hours
(5)

3.

Saphia is organising a conference.
People at the conference will sit at circular tables.



Diagram **NOT**
accurately drawn

Each table has a diameter of 140 cm.
Each person needs 60 cm around the circumference of the table.

There are 12 of these tables in the conference room.
A total of 90 people will be at the conference.

Are there enough tables in the conference room?

(Total for Question 11 is 4 marks)

4

The diagram shows a large tin of pet food in the shape of a cylinder.

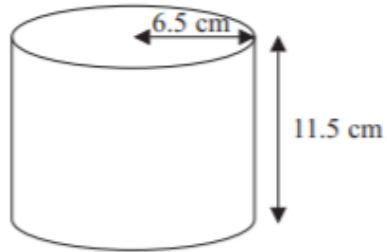


Diagram **NOT**
accurately drawn

The large tin has a radius of 6.5 cm and a height of 11.5 cm.

A pet food company wants to make a new size of tin.

The new tin will have a radius of 5.8 cm.

It will have the same volume as the large tin.

Calculate the height of the new tin.

Give your answer correct to one decimal place.

..... cm

(Total for Question 24 is 3 marks)

5.

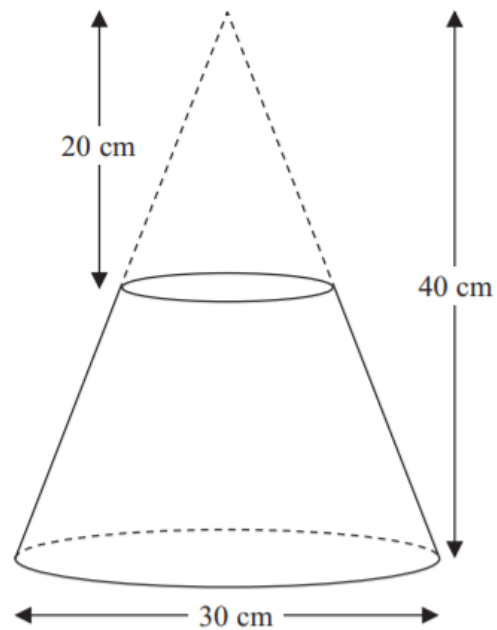


Diagram **NOT**
accurately drawn

A frustum is made by removing a small cone from a similar large cone.

The height of the small cone is 20 cm.

The height of the large cone is 40 cm.

The diameter of the base of the large cone is 30 cm.

Work out the volume of the frustum.

Give your answer correct to 3 significant figures.

6.

i The diagram shows a swimming pool in the shape of a prism.

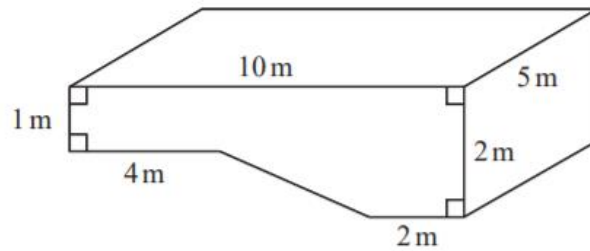


Diagram **NOT** accurately drawn

The swimming pool is empty.

Water from 3 water tankers is going to be put into the pool.
There are 20 000 litres of water in each water tanker.

Sam thinks that the surface of the water in the pool will be 10 cm below the top of the pool.

Is Sam correct?

You must show how you get your answer.

($1 \text{ m}^3 = 1000 \text{ litres}$)