

GCSE QUESTIONS

Q1. NON-CALCULATOR

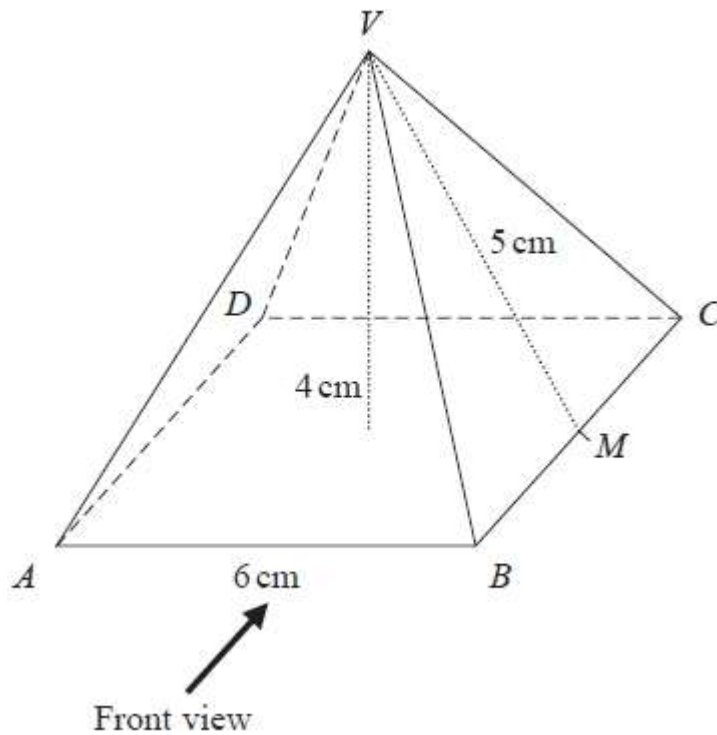
The total surface area of a cube is 294 cm^2 .
Work out the volume of the cube.

..... cm^3

(Total for question = 4 marks)

Q2. NON-CALCULATOR

Here is a solid square-based pyramid, $VABCD$.



The base of the pyramid is a square of side 6 cm .
The height of the pyramid is 4 cm .
 M is the midpoint of BC and $VM = 5 \text{ cm}$.

(a) Draw an accurate front elevation of the pyramid from the direction of the arrow.



(2)

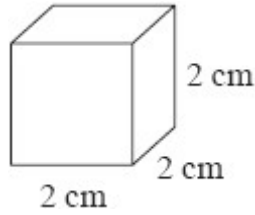
(b) Work out the total surface area of the pyramid.

.....
(4)

(Total for question = 6 marks)

Q3. CALCULATOR ALLOWED

The diagram shows a cube of side length 2 cm.



Vera says,

"The volume of any solid made with 6 of these cubes is 48 cm^3 "

(a) Is Vera correct?

You must show your working.

.....
.....

(2)

(b) (i) Draw a cuboid that can be made with 6 of these cubes.

Write the dimensions of the cuboid on your diagram.

(ii) Work out the surface area of your cuboid.

(1)

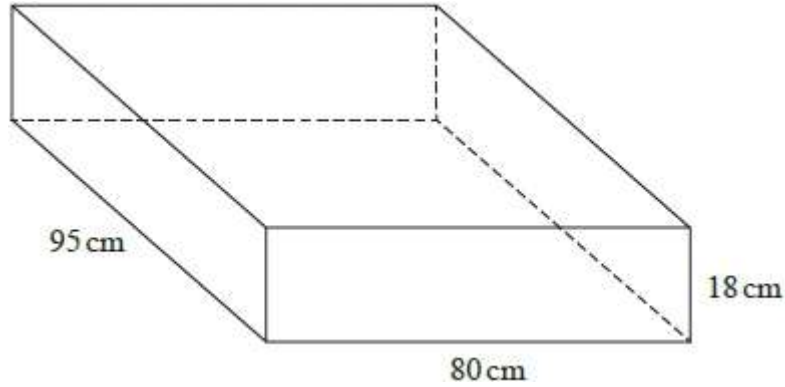
..... cm^2

(2)

(Total for question = 5 marks)

Q4. CALCULATOR ALLOWED

A sofa has 6 identical cushions.
Each cushion is a cuboid 18 cm by 80 cm by 95 cm.



The cushions are covered with a protective spray.
The protective spray is in cans.
The label on each can has this information.

Spray in this can covers 4m^2

(a) Work out how many cans are needed to cover the 6 cushions with protective spray.

.....
(5)

The information on each label is inaccurate.
The spray in each can covers 10% more than 4m^2 .

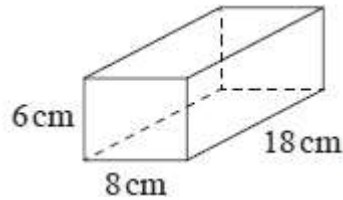
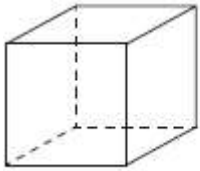
(b) How will this affect the number of cans needed for the 6 cushions?

You must show how you get your answer.

.....
.....

(2)
(Total for question = 7 marks)

Q5. CALCULATOR ALLOWED



The diagram shows a cube and a cuboid.

The total surface area of the cube is equal to the total surface area of the cuboid.

Janet says, "The volume of the cube is equal to the

volume of the cuboid."

Is Janet correct? You must show how you get your answer.

Q6. CALCULATOR ALLOWED

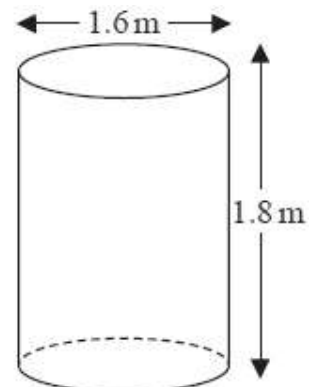
Jeremy has to cover 3 tanks completely with paint.

Each tank is in the shape of a cylinder with a top and a bottom. The tank has a diameter of 1.6 m and a height of 1.8 m.

Jeremy has 7 tins of paint. Each tin of paint covers 5 m^2

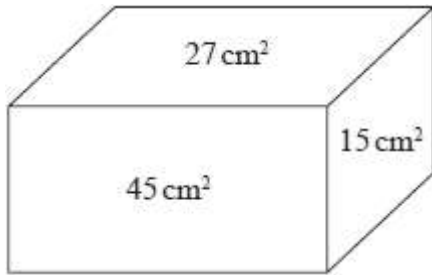
Has Jeremy got enough paint to cover completely the 3 tanks? You must show how you get your answer.

(Total for question = 5 marks)



(Total for question = 5 marks)

Q7. CALCULATOR ALLOWED



The diagram shows a solid metal cuboid.

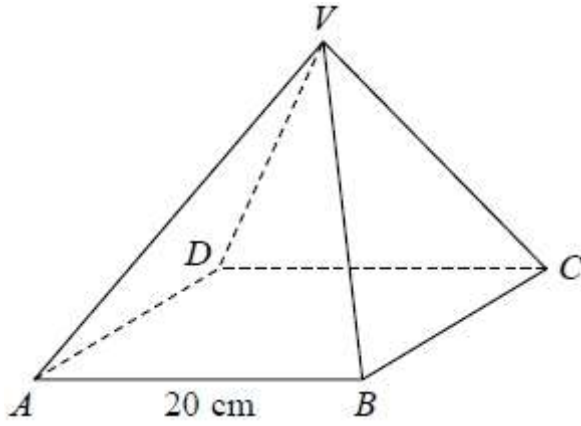
The areas of three of the faces are marked on the diagram.
The lengths, in cm, of the edges of the cuboid are whole numbers.

The metal cuboid is melted and made into cubes.
Each of the cubes has sides of length 2.5 cm.

Work out the greatest number of these cubes that can be made.

.....
(Total for question = 5 marks)

Q8. CALCULATOR ALLOWED



$VABCD$ is a solid pyramid.

$ABCD$ is a square of side 20 cm.

The angle between any sloping edge and the plane $ABCD$ is 55°

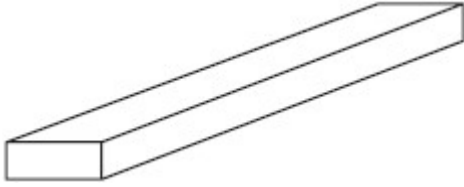
Calculate the surface area of the pyramid.
Give your answer correct to 2 significant figures.

.....cm²

(Total for question = 5 marks)

Q9. CALCULATOR ALLOWED

A solid cuboid has a volume of 40 cm^3



The cuboid has a total surface area of 100 cm^2
One edge of the cuboid has length 2 cm .

Find the length of a diagonal of the cuboid.
Give your answer correct to 3 significant figures.

..... cm

(Total for question = 6 marks)