Spheres

Question 1

The diagram shows a solid hemisphere of radius 8 cm.

Diagram NOT accurately drawn

←—8 cm—→

Work out the total surface area of the hemisphere.
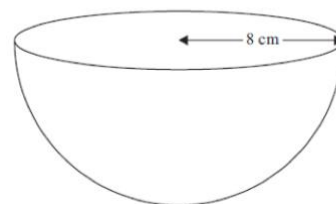Give your answer correct to 3 significant figures.

.... cm^2

(3 marks)

Question 2

A solid is made from a cylinder and a hemisphere.
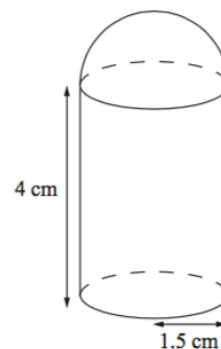The cylinder has radius 1.5 cm and height 4 cm.
The hemisphere has radius 1.5 cm.

Diagram NOT accurately drawn

4 cm

1.5 cm

Work out the total volume of the solid.
Give your answer correct to 3 significant figures.

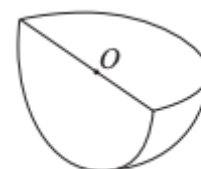.......................... cm^3

(5 marks)

Question 3

Shape S is one quarter of a solid sphere, centre O.

The volume of S is 576π cm ^{3}

Find the surface area of S .
Give your answer correct to 3 significant figures.
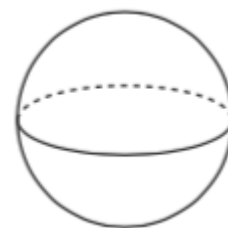
O

Shape S

.... cm ^{2}

(5 marks)

Question 4

A sphere has a surface area of 81π cm^2.

Work out the volume of the sphere.
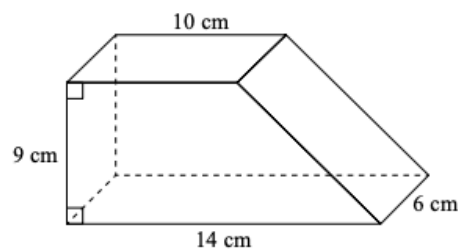Give your answer correct to 3 significant figures.

....

(4 marks)

Question 5

The diagram shows a solid prism.

The prism is made from wood with density 0.7 g/cm^3

Work out the mass of the prism.

.... g

(4 marks)

10 cm

9 cm

14 cm

6 cm

Question 6

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

.... cm^3

(4 marks)

Question 7

The diagram shows two solid toy bricks, Brick **A** and Brick **B**.

Brick **A** is a triangular prism of length 5 cm.
The cross section of Brick **A** is an isosceles right-angled triangle with equal sides of length 6 cm.
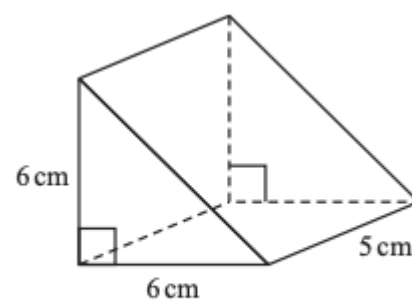
Brick **B** is half a cylinder of length 5 cm.
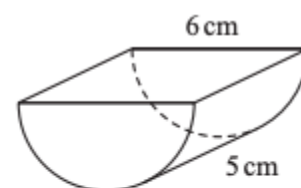The semicircular cross section of Brick **B** has diameter 6 cm.

The volume of Brick **A** is greater than the volume of Brick **B**.

How much greater?
Give your answer correct to 1 decimal place.

.... cm^3

(4 marks)

6 cm

6 cm

5 cm

Brick **A**

6 cm

5 cm

Brick **B**