Volume and Surface Area of Cylinders

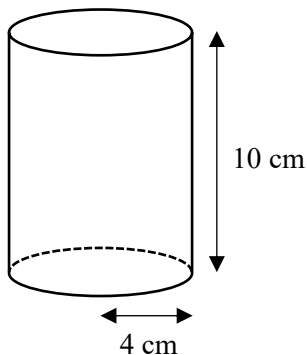**1** Here is a cylinder with a radius of 4 cm and a height of 10 cm.

10 cm

4 cm

(a) Work out the volume of the cylinder.
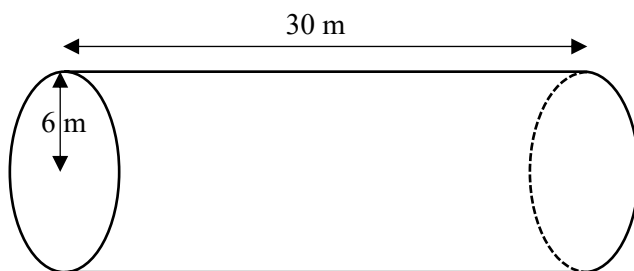Give your answer in terms of π.

.... cm^3

(2)

(b) Work out the surface area of the cylinder.
Give your answer in terms of π.

.... cm^2

(3)

(Total for Question 1 is 5 marks)

2 Here is a cylinder.

(a) Work out the volume of the cylinder.
Give your answer to 1 decimal place.

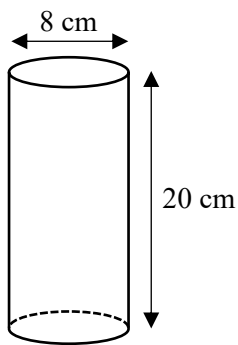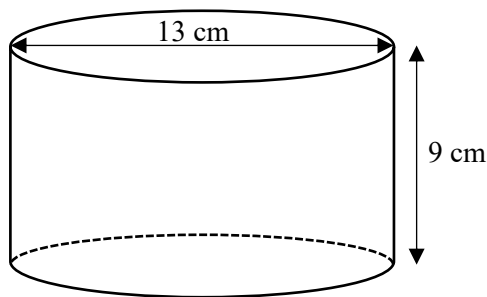.. m³
(2)

(b) Work out the surface area of the cylinder.
Give your answer to 1 decimal place.

.... m²
(3)

(Total for Question 2 is 5 marks)

Solutions

3   Here is a cylinder.

8 cm

20 cm

(a) Work out the volume of the cylinder.
    Give your answer to 1 decimal place.

.... cm³

(2)

(b) Work out the surface area of the cylinder.
    Give your answer to 1 decimal place.

.... cm²

(3)

(Total for Question 3 is 5 marks)

4 Here is a cylinder.

13 cm

9 cm

(a) Work out the volume of the cylinder.
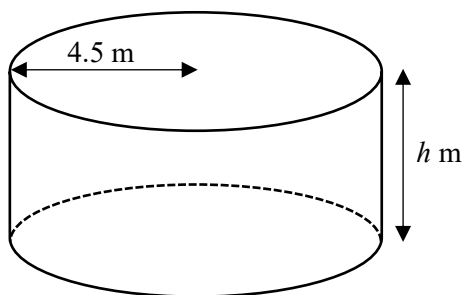   Give your answer to 4 significant figures.

.... cm³

(2)

(b) Work out the surface area of the cylinder.
   Give your answer to 3 significant figures.

.... cm²

(3)

(Total for Question 4 is 5 marks)

5 Here is a cylinder with a volume of 299 m^3

(a) Work out the value of h, the height of the cylinder.
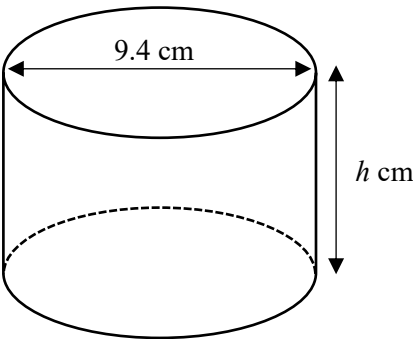   Give your answer to 1 decimal place.

.... m

(2)

(b) Work out the surface area of the cylinder.
    Give your answer to 3 significant figures.

.... m^2

(3)

(Total for Question 5 is 5 marks)

6 Here is a cylinder with a volume of 576 cm³

9.4 cm

h cm

(a) Work out the value of h, the height of the cylinder.
   Give your answer to 1 decimal place.

.... cm

(2)

(b) Work out the surface area of the cylinder.
   Give your answer to 4 significant figures.

.... cm²

(3)

(Total for Question 6 is 5 marks)

7 Here are two cylinders.

Cylinder B

Cylinder A

18 cm

18 cm

13 cm
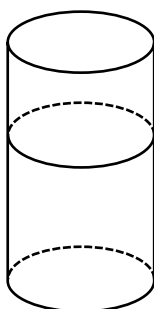
21 cm
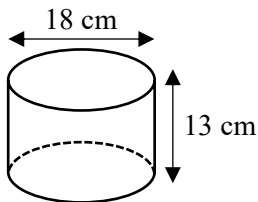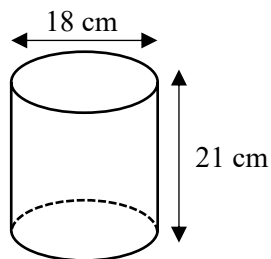
Cylinder A is placed on top of **cylinder B** to form a new cylinder.

Work out the surface area of the new cylinder.
Give your answer to 4 significant figures.

.... cm²

(Total for Question 7 is 3 marks)

Solutions

8   Here is a cylinder with a height of 2.4 cm

2.4 cm
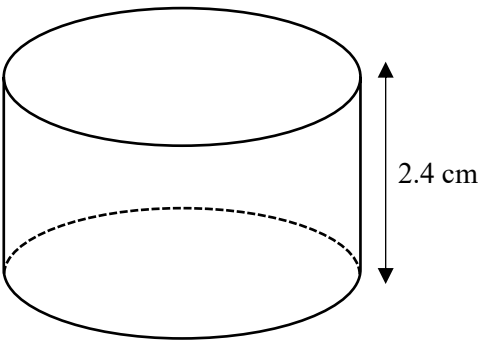
The ratio of the radius of the cylinder to the height of the cylinder is 2 : 3

(a) Work out the volume of the cylinder.
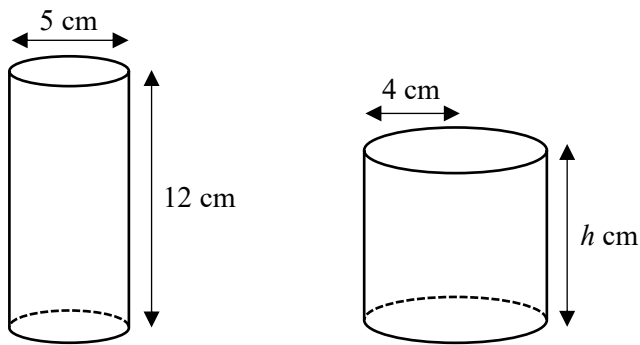   Give your answer to 1 decimal place.

.... cm^3

(3)

(b) Work out the surface area of the cylinder.
   Give your answer to 3 significant figures.

.... cm^2

(3)

(Total for Question 8 is 6 marks)

9 Here are two cylinders with the same volume.

5 cm

12 cm

4 cm

h cm

Work out the value of h, the height of the second cylinder.
Give your answer to 2 decimal places.

.... cm

(Total for Question 9 is 4 marks)

10 Here is a cylinder with a volume of 266 cm³

4.8 cm

r cm
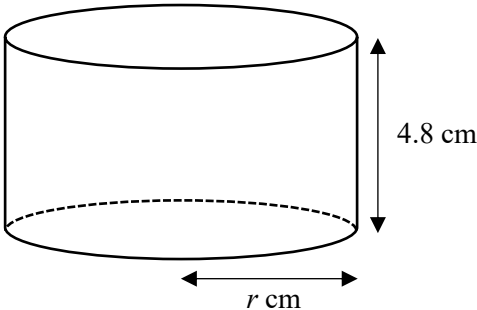
(a) Work out the value of r, the radius of the cylinder.
Give your answer to 1 decimal place.

.... cm

(3)

(b) Work out the surface area of the cylinder.
Give your answer to 4 significant figures.

.... cm²

(3)

(Total for Question 10 is 6 marks)