



# Volume and Surface Area of Spheres



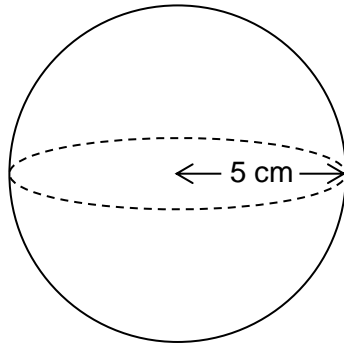
SCAN ME

REVISE THIS TOPIC

CHECK YOUR ANSWERS

SCAN ME

1 Here is a sphere with a radius of 5 cm.



$$\text{Volume of a sphere} = \frac{4}{3}\pi r^3$$

$$\text{Surface area of a sphere} = 4\pi r^2$$

1 (a) Work out the volume of the sphere. Give your answer to 1 decimal place. [2 marks]

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Answer \_\_\_\_\_ cm<sup>3</sup>

1 (b) Work out the surface area of the sphere. Give your answer to 1 decimal place. [2 marks]

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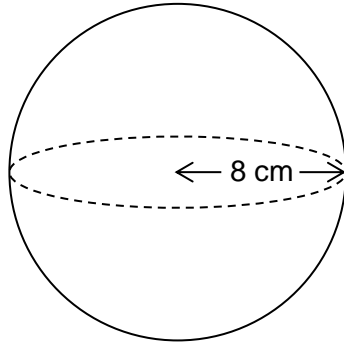
Answer \_\_\_\_\_ cm<sup>2</sup>





2 Here is a sphere with a radius of 8 cm.

Volume of a sphere =  $\frac{4}{3}\pi r^3$   
Surface area of a sphere =  $4\pi r^2$



2 (a) Work out the volume of the sphere.  
Give your answer to 1 decimal place. [2 marks]

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Answer \_\_\_\_\_ cm<sup>3</sup>

2 (b) Work out the surface area of the sphere.  
Give your answer to 1 decimal place. [2 marks]

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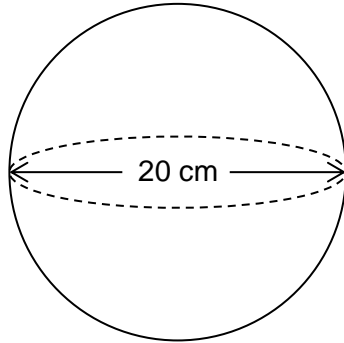
Answer \_\_\_\_\_ cm<sup>2</sup>





3 Here is a sphere with a diameter of 20 cm.

Volume of a sphere =  $\frac{4}{3}\pi r^3$   
Surface area of a sphere =  $4\pi r^2$



3 (a) Work out the volume of the sphere.  
Give your answer to 1 decimal place. [2 marks]

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Answer \_\_\_\_\_ cm<sup>3</sup>

3 (b) Work out the surface area of the sphere.  
Give your answer to 1 decimal place. [2 marks]

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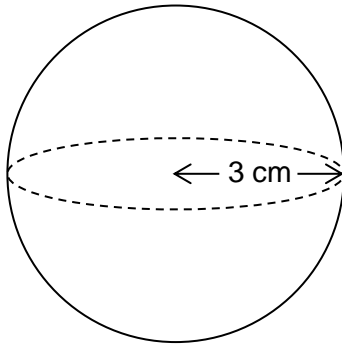
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Answer \_\_\_\_\_ cm<sup>2</sup>





4 Here is a sphere with a radius of 3 cm.



Volume of a sphere =  $\frac{4}{3}\pi r^3$   
Surface area of a sphere =  $4\pi r^2$



4 (a) Work out the volume of the sphere.  
Give your answer in terms of  $\pi$ . [3 marks]

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Answer \_\_\_\_\_  $\text{cm}^3$

4 (b) Work out the surface area of the sphere.  
Give your answer in terms of  $\pi$ . [2 marks]

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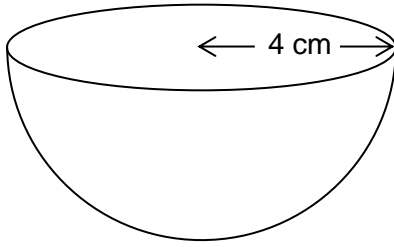
Answer \_\_\_\_\_  $\text{cm}^2$





5 Here is a hemisphere with a radius of 4 cm.

Volume of a sphere =  $\frac{4}{3}\pi r^3$   
 Surface area of a sphere =  $4\pi r^2$



5 (a) Work out the volume of the hemisphere. Give your answer to 1 decimal place. [3 marks]

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Answer \_\_\_\_\_ cm<sup>3</sup>

5 (b) Work out the surface area of the sphere. Give your answer to 1 decimal place. [3 marks]

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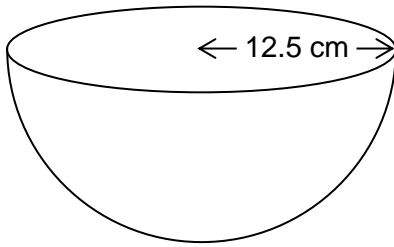
Answer \_\_\_\_\_ cm<sup>2</sup>

Turn over ►





6 Here is a hemisphere with a radius of 12.5 cm.



Volume of a sphere =  $\frac{4}{3}\pi r^3$   
Surface area of a sphere =  $4\pi r^2$

6 (a) Work out the volume of the hemisphere.  
Give your answer to 1 decimal place. [3 marks]

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Answer \_\_\_\_\_ cm<sup>3</sup>

6 (b) Work out the surface area of the sphere.  
Give your answer to the nearest integer. [3 marks]

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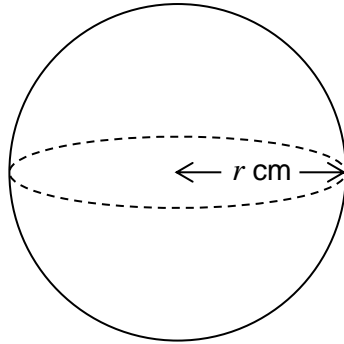
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Answer \_\_\_\_\_ cm<sup>2</sup>





7 Here is a sphere.



$$\text{Volume of a sphere} = \frac{4}{3} \pi r^3$$

$$\text{Surface area of a sphere} = 4\pi r^2$$

The volume of the sphere is 10 000 cm<sup>3</sup>

Work out the value of  $r$ , the radius of the sphere.  
Give your answer to 2 decimal places.

[3 marks]

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$r =$  \_\_\_\_\_ cm

Turn over ►

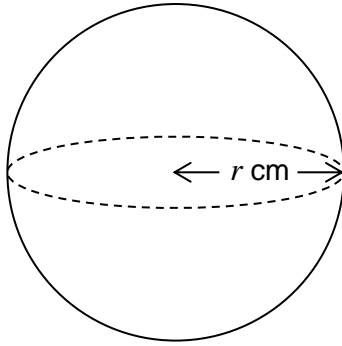




8 Here is a sphere.

$$\text{Volume of a sphere} = \frac{4}{3} \pi r^3$$

$$\text{Surface area of a sphere} = 4\pi r^2$$



The volume of the sphere is  $700 \text{ cm}^3$

Work out the surface area of the sphere.  
Give your answer to 1 decimal place.

[5 marks]

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Answer \_\_\_\_\_  $\text{cm}^2$

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