



THIRD SPACE  
LEARNING

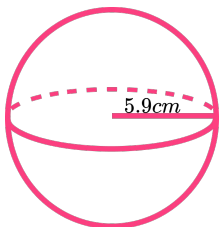
# GCSE Exam Questions

Volume and Surface Area of  
Spheres | Geometry & Measure

## GCSE Exam Questions: Volume and Surface Area of Spheres

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

- 1) Here is a sphere.

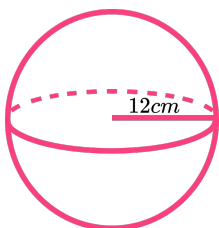


Calculate the volume of the sphere.

Give your answer to 3 significant figures.

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(2 marks)

- 2) Here is a sphere.



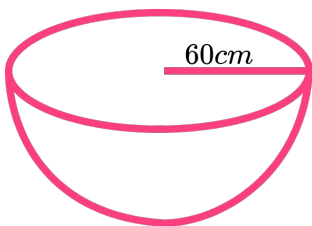
Calculate the surface area of the sphere.

Leave your answer in terms of  $\pi$

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(2 marks)

- 3) A container is a hemisphere of radius 60cm.

Water fills the container at a rate of 7L/min.

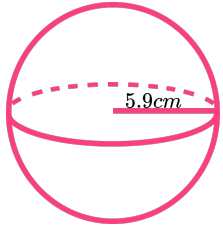
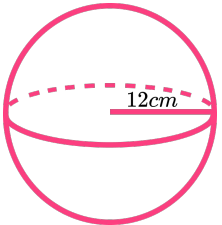
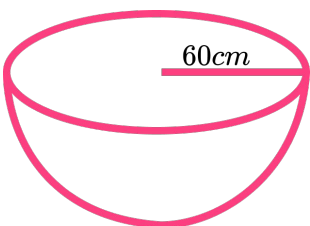


How long does it take to fill the container?

Give your answer to the nearest minute.

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(5 marks)

## GCSE Exam Questions: Volume and Surface Area of Spheres Answers

	Question	Answer	Marks
1)	<p>Here is a sphere.</p>  <p>Calculate the volume of the sphere.</p> <p>Give your answer to 3 significant figures.</p>	$\frac{4}{3} \times \pi \times 5.9^3$ $= 860\text{cm}^3$	<p>(1)</p> <p>(1)</p>
2)	<p>Here is a sphere.</p>  <p>Calculate the surface area of the sphere.</p> <p>Leave your answer in terms of <math>\pi</math>.</p>	$4 \times \pi \times 12^2$ $= 576\pi\text{cm}^2$	<p>(1)</p> <p>(1)</p>
3)	<p>A container is a hemisphere of radius <math>60\text{cm}</math>.</p> <p>Water fills the container at a rate of <math>7\text{L}/\text{min}</math>.</p>  <p>How long does it take to fill the container?</p> <p>Give your answer to the nearest minute.</p>	$\frac{1}{2} \times \frac{4}{3} \times \pi \times 60^3$ $= 452389.3\ldots\text{cm}^3$ $7\text{L}/\text{min} = 7000\text{cm}^3/\text{min}$ $452389.3\ldots \div 7000 = 64.627\ldots$ <p>65 minutes</p>	<p>(1)</p> <p>(1)</p> <p>(1)</p> <p>(1)</p> <p>(1)</p>

# Where to go next?

For more diagnostic questions, and GCSE maths revision resources and worksheets to support students in fixing any misconceptions take a look at the free Third Space Learning [GCSE maths revision](#) pages.

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