teachably

Name _____

Date _____

GCSE Mathematics

F/H

Volume & Surface Area of Cylinders

GCSE Maths Practice

Total Marks	Time	Questions
49	49 min	20

Instructions:

- Do not use a calculator when you see: 
- Answer all questions in the spaces provided.
- Show all your working - marks are awarded for method as well as final answers.
- Cross through any work you do not want to be marked.
- Check your answers if you have time at the end.

Edexcel-style questions

Q1

Grade 5 Edexcel style

Find the volume of the cylinder shown, leaving your answer in terms of π.

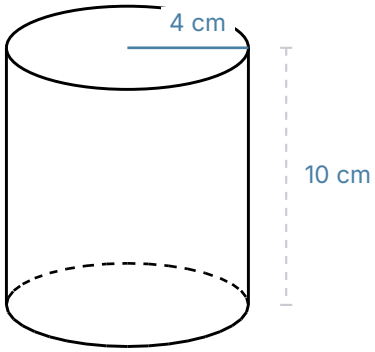

Diagram NOT accurately drawn

Answer _____

teachably **[2 marks]**

Q2

Grade 5 Edexcel style

Find the curved surface area of the cylinder shown, leaving your answer in terms of π.

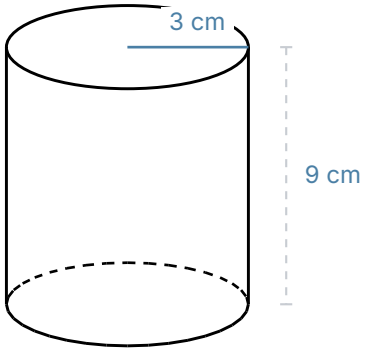

Diagram NOT accurately drawn

Answer _____

teachably **[2 marks]**

Q3

Grade 5 Edexcel style

A cylinder has a volume of 250π cm³ and a radius of 5 cm. Find the height of the cylinder.

Answer _____

teachably **[2 marks]**

Q4

Grade 6 Edexcel style

A cylindrical water tank has a radius of 20 cm and a height of 100 cm. Find the capacity of the tank in litres (1000 cm^3 = 1 litre). Use $\pi = 3.14$.

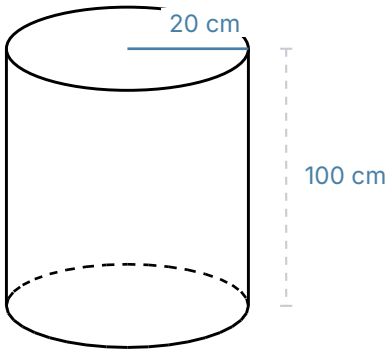

Diagram NOT accurately drawn

Answer _____

teachably **[2 marks]**

Q5

Grade 6 Edexcel style

The diagram shows the circular cross-section of a hollow metal pipe, with outer radius 6 cm and inner radius 4 cm. The pipe is 15 cm long. Find the volume of metal used to make the pipe. Use π = 3.14.

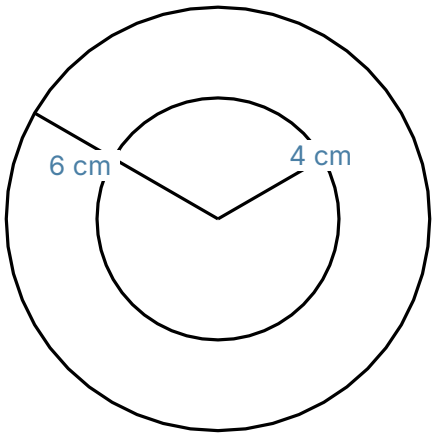

Diagram NOT accurately drawn

Answer _____

teachably **[2 marks]**

AQA-style questions

Q6

Grade 5 AQA style

Find the volume of the cylinder shown. Use π = 3.14.

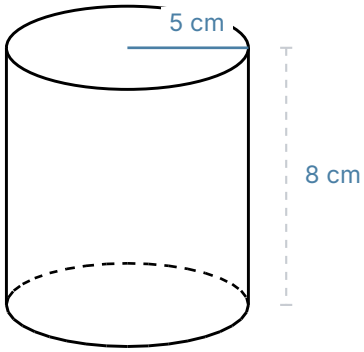

Diagram NOT accurately drawn

Answer _____

teachably **[2 marks]**

Q7

Grade 5 AQA style

Find the total surface area of the cylinder shown (the curved surface plus both circular ends). Use π = 3.14.

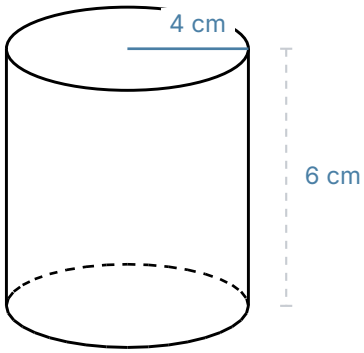

Diagram NOT accurately drawn

Answer _____

teachably **[3 marks]**

Q8

Grade 6 AQA style

A cylinder has a volume of 942 cm³ and a height of 12 cm. Find the radius of the cylinder. Use π = 3.14.

Answer _____

teachably **[2 marks]**

Q9

Grade 6 AQA style

Two cylindrical tins have the same volume. Tin A has radius 3 cm and height 16 cm. Tin B has radius 6 cm. Find the height of Tin B.

Answer _____

Q10

Grade 6 AQA style

A water trough is a half-cylinder lying on its side, with radius 7 cm and length 20 cm. Find the volume of the trough, leaving your answer in terms of π.

Answer _____

OCR-style questions

Q11

Grade 5 OCR style

Find the volume of the cylinder shown. Use π = 3.14.

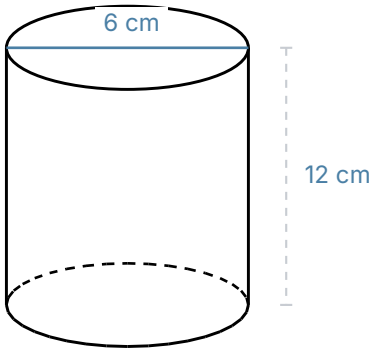

Diagram NOT accurately drawn

Answer _____

teachably **[3 marks]**

Q12

Grade 5 OCR style

Find the curved surface area of the cylinder shown. Use π = 3.14.

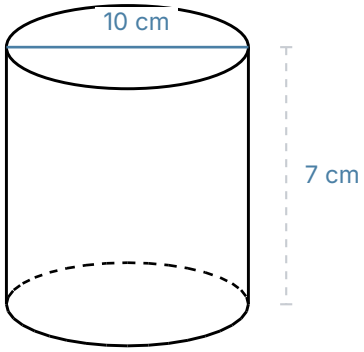

Diagram NOT accurately drawn

Answer _____

Q13

Grade 5 OCR style

A cylinder has a curved surface area of 100π cm² and a height of 10 cm. Find the radius of the cylinder.

Answer _____

Q14

Grade 6 OCR style

A solid cylindrical metal rod has radius 5 cm and length 20 cm. It is melted down and recast into small cylindrical discs, each with radius 5 cm and height 1 cm. Find how many discs can be made (assume no metal is wasted).

Answer _____

teachably **[3 marks]**

Q15

Grade 6 OCR style

A cylindrical candle of radius 5 cm and height 18 cm is melted down and recast into a cuboid with a square base of side 10 cm. Find the height of the cuboid. Use π = 3.14.

Answer _____

teachably **[3 marks]**

Teachably-style questions

Q16

Grade 5 Teachably style

Find the volume of the cylinder shown, leaving your answer in terms of π.

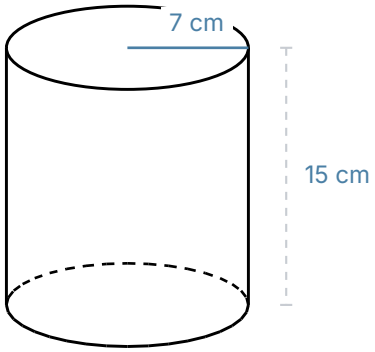

Diagram NOT accurately drawn

Answer _____

teachably **[2 marks]**

Q17

Grade 5 Teachably style

Find the total surface area of the cylinder shown (the curved surface plus both circular ends), leaving your answer in terms of π.

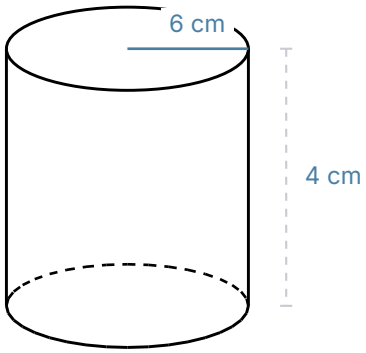

Diagram NOT accurately drawn

Answer _____

teachably **[3 marks]**

Q18

Grade 6 Teachably style

A cylinder has a volume of 1017.36 cm³ and a radius of 6 cm. Find the height of the cylinder. Use π = 3.14.

Answer _____

teachably **[2 marks]**

Q19

Grade 6 Teachably style

Water flows into an empty cylindrical tank of radius 10 cm and height 20 cm at a rate of 785 cm³ per minute. Use π = 3.14 to find how long it takes to fill the tank completely.

Answer _____

teachably **[2 marks]**

Q20

Grade 6 Teachably style

A cylinder has a volume of 150π cm³ and a curved surface area of 60π cm². Find the radius and the height of the cylinder.

Answer _____

teachably **[4 marks]**

END OF PAPER