HIGHER

3.3 Similarity: Length, Area and Volume Scale Factors: 10-minute Pack

Total Marks

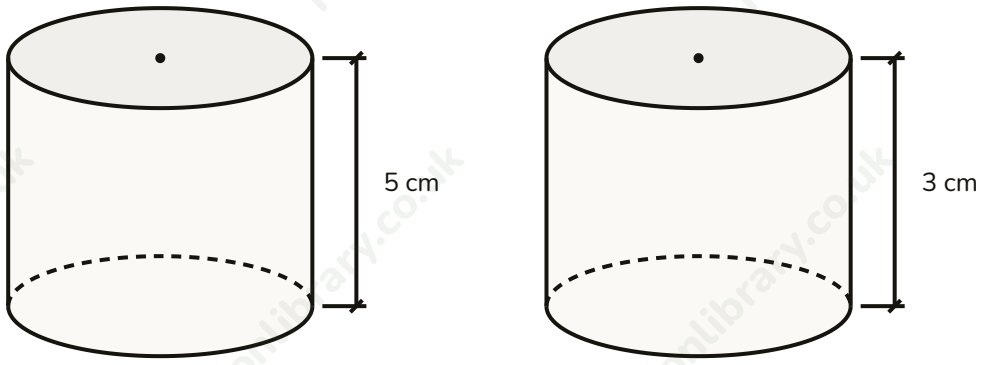
EDEXCEL 4MA1 · Calculator allowed · about 10 minutes

Name: _____ Date: ____ / ____ / _____

Answer in full sentences for any question that asks to 'Show that' or to 'Explain'. Spend about 10 minutes on the paper.

1 Two similar cylinders have heights 5 cm and 3 cm. The surface area of the larger one is 5 cm². Find the surface area of the smaller one.

Diagram NOT accurately drawn



(Total for Question 1 is 3 marks)

2 Two similar bottles have volumes 512 cm³ and 125 cm³. The first has a height of 11 cm. Find the height of the second.

(Total for Question 2 is 4 marks)

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Mark scheme · 3.3 Similarity: Length, Area and Volume Scale Factors: 10-minute Pack

Question 1

length scale factor = 3/5 = 3/5	**M1**
surface area scale factor = $(3/5)^2$ = 9/25	**M1**
surface area = 1.8 cm²	**A1**

Answer: 1.8 cm^2

Question 2

volume ratio = 125/512 = 125/512	**M1**
length scale factor = cube root of 125/512 = 5/8	**M1**
11 x 5/8	**M1**
6.875 cm	**A1**

Answer: 6.875 cm

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