

WJEC MATHEMATICS

HIGHER
3 TIER TOPICS

**AREA, SURFACE AREA, AND
NETS**

@MrGoreMaths.

Spec 2 – Maths – P2

13. A right-circular cone of vertical height 10 cm and base radius 5 cm is attached to a cylinder of the same radius and height 8 cm.

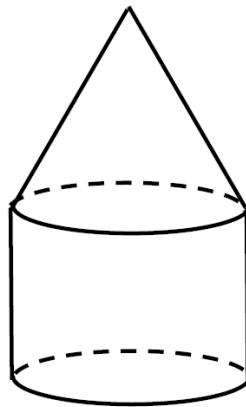


Diagram not drawn to scale

Calculate the total surface area of the shape.

[6]

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June 2017 – Maths – P1

- 19.** By considering algebraic expressions, show that it will never be possible for the surface area of a sphere of radius r to be equal to the surface area of a cube with sides of length r . [2]

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Spec 1 – Numeracy – P1

2. The Hafod Hotel swimming pool is currently in need of improvement.

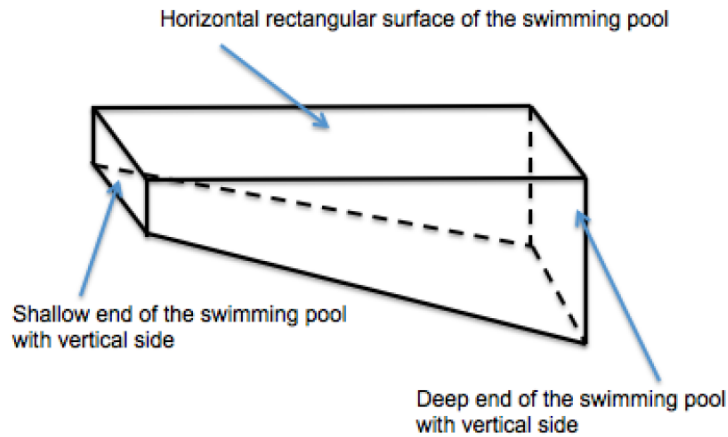


Diagram not drawn to scale

- (a) The pool is 1 metre deep at the shallow end, dropping to 3 metres deep at the other end.
The width of the pool is 10 metres and the length is 20 metres.
The length of the sloping floor of the pool is 20.1 metres.

The four walls and the floor within the pool are to be covered in tiles.
This will cost £20 per m².

The labour cost of fixing the tiles is £150 per day.
It should take 6 days to tile the pool.

Calculate how much it will cost the hotel to tile the swimming pool. [8]

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Spec 2 – Numeracy – P1

2. Derek works for a company which designs and fits kitchen cupboards. Kitchen cupboards and worktops are usually measured in mm.



- (a) A rectangular worktop needs to be covered in a special varnish. The worktop measures 3000 mm long by 700 mm wide. Calculate the area of the top surface of the worktop in m^2 .

[2]

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June 2017 – Numeracy – P1

11. The diagram below shows a wooden end-piece for a curtain pole. It is in the shape of a cone with measurements as shown in the diagram.

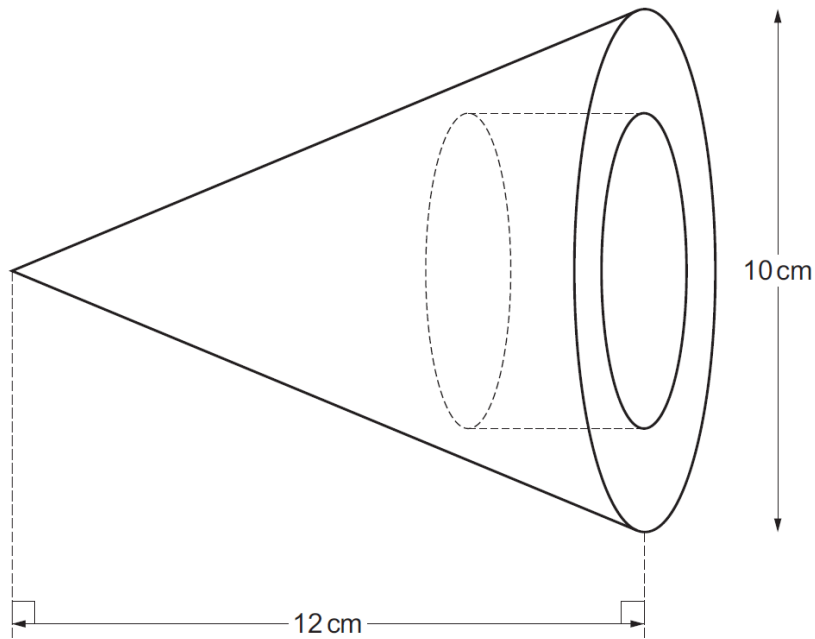


Diagram not drawn to scale

The curtain pole sits in a cylindrical hole that has been drilled into the end-piece. The hole is of radius 3 cm and depth 4 cm.

- (b) The surface area of the end-piece is to be painted, except for the area inside the hole. Calculate the surface area that is to be painted. Give your answer in terms of π . [6]

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