EXAM PAPERS PRACTICE

GCSE AQA Maths 8300

Mensuration & Calculation

Answers

"We will help you to achieve A Star "

Answer 1

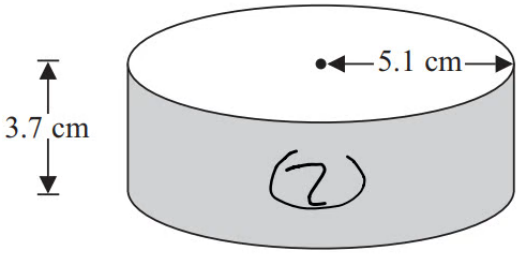


Diagram **NOT** accurately drawn

A solid cylinder has a radius of 5.1 cm and a height of 3.7 cm.

Work out the **total** surface area of the cylinder.
Give your answer correct to 3 significant figures.

$1 = \pi r^2$

$1 + 3 = 2\pi r^2 = 2\pi(5.1)^2$

$2 = (2\pi r) \times h = 2\pi(5.1)(3.7)$

$(1+3) + 2 = 163.42.. + 118.56..$

or $\frac{2601}{50}\pi + \frac{1887}{50}\pi$

282 (3sf) ..... cm^2

Answer 2

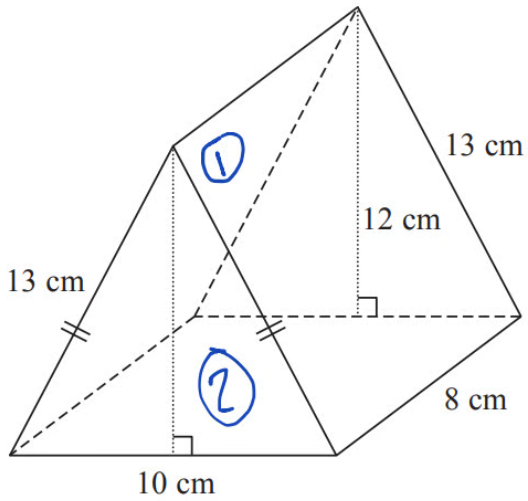


Diagram **NOT** accurately drawn

The diagram shows a prism.
The cross-section of the prism is an isosceles triangle.
The lengths of the sides of the triangle are 13 cm, 13 cm and 10 cm.
The perpendicular height of the triangle is 12 cm.
The length of the prism is 8 cm.

Work out the total surface area of the prism.

Total surface area of the two triangles (1) + SA of the two rectangles (2) + the SA of the base (3)

Area of a triangle is 0.5 x base x height : 0.5 (10) (12) = 60
Area of rectangle is width x height : 8x 13 = 104
SA of base : 8x10 = 80

Total SA = 2(60) + 2(104) + 80 = 408

408 ..... cm^2

Answer 3

Here is a cuboid.

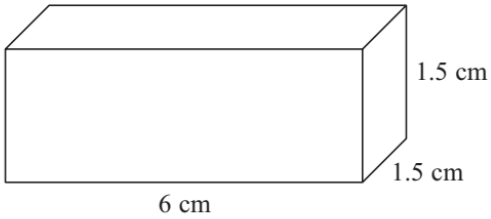
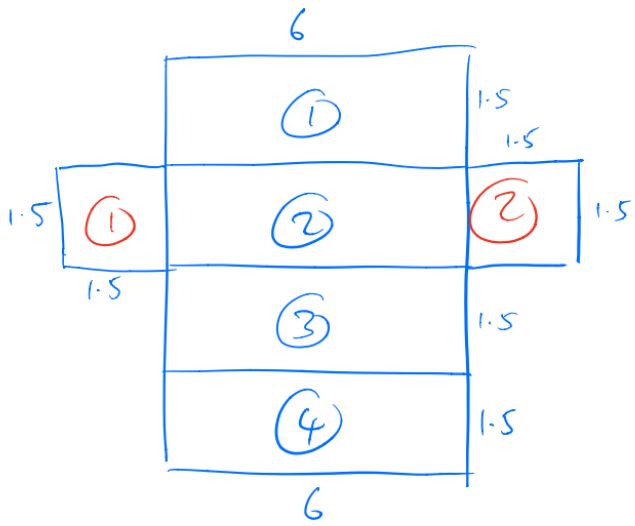
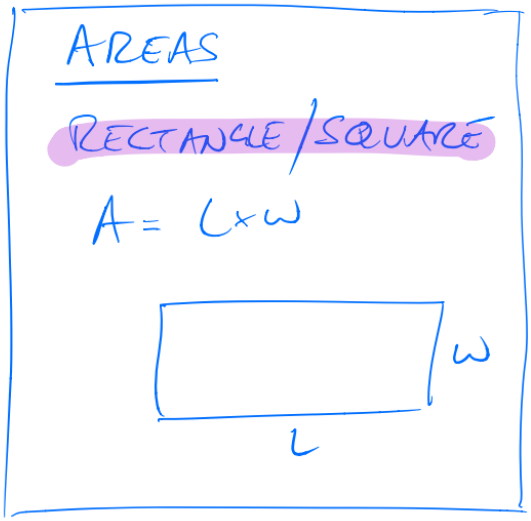


Diagram **NOT** accurately drawn

The cuboid is 6 cm by 1.5 cm by 1.5 cm.

Work out the total surface area of the cuboid.





TSA = 4 × RECTANGLE + 2 × SQUARE

$= 4 \times 6 \times 1.5 + 2 \times 1.5 \times 1.5$

$= 40.5 \text{ cm}^2$

Answer 4

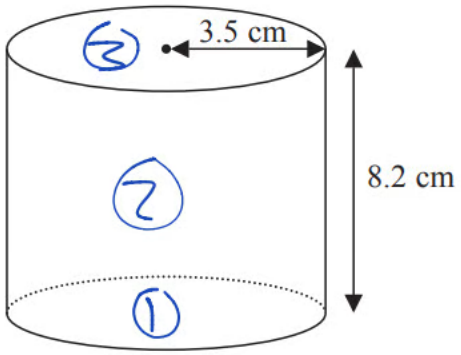


Diagram **NOT** accurately drawn

A solid cylinder has radius 3.5 cm and height 8.2 cm.

Work out the **total** surface area of the cylinder.
Give your answer correct to 3 significant figures.

Area = 1 + 2 + 3

1&3 are equal

1:

$\pi r^2 = \pi (3.5)^2 = 12.25$

Area 1 + 3 = 24.5π

Curved area = 2πr h

2π (3.5)(8.2) = 57.4π

57.4π + 24.5π = 257 (3sf)

257 cm²

Answer 5

(b) The height of the cylinder is 30 cm, correct to the nearest centimetre.

(i) Write down the lower bound of the height of the cylinder.

29.5 cm

(ii) Write down the upper bound of the height of the cylinder.

30.5 cm

Answer 6

The diagram shows a solid cylinder.

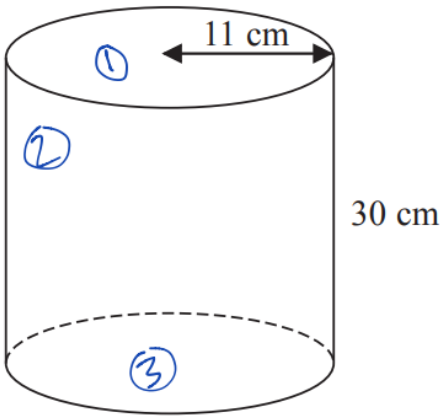


Diagram **NOT** accurately drawn

The cylinder has a height of 30 cm and a radius 11 cm.

(a) Work out the **total** surface area of the cylinder.
Give your answer correct to 2 significant figures.

Surface area of 1 + 3 :

$2\pi r = 2\pi(11)(11) = 242\pi$

Area of 2:
Circumference x height
$2\pi r \times h = 2\pi(11)(30) = 660\pi$

$2 + 1\&3 = (660 + 242)\pi = 902\pi$

2800(3sf) cm^2

Answer 7

A cylinder has diameter 12 cm and length 30 cm.

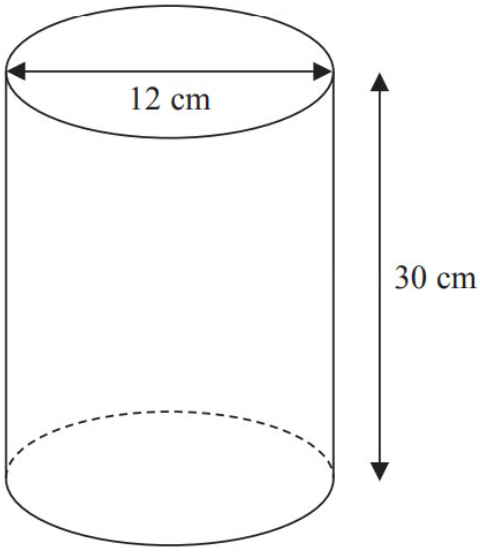


Diagram **NOT** accurately drawn

Work out the curved surface area of the cylinder.
Give your answer correct to 3 significant figures.

Curved surface is equal to circumference x height

Circumference = ∏ x Diameter = 12∏

Height = 30

12∏ X 30 = 360π = 1130.97

1130 (3sf) cm^2