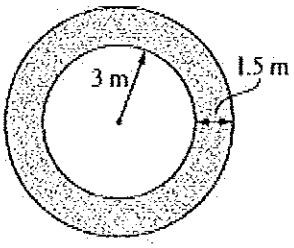
Past HSC papers on Measurement

1. A path 1.5 metres wide surrounds a circular lawn of radius 3 metres.



NOT TO SCALE

What is the approximate area of the path?

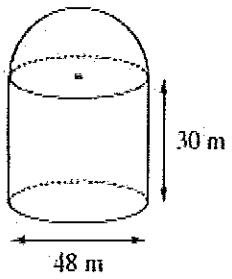
(A) 7.1 m^2

(B) 21.2 m^2

(C) 35.3 m^2

(D) 56.5 m^2

2. A grain silo is made up of a cylinder with a hemisphere (half a sphere) on top. The outside of the silo is to be painted.



What is the area to be painted?

(A) 8143 m^2

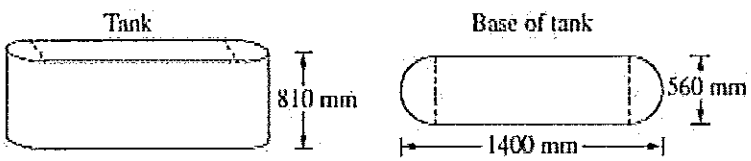
(B) 11762 m^2

(C) 12667 m^2

(D) 23524 m^2

3. (c) The base of a water tank is in the shape of a rectangle with a semicircle at each end, as shown. 4

The tank is 1400 mm long, 560 mm wide, and has a height of 810 mm.



NOT TO SCALE

What is the capacity of the tank, to the nearest litre?

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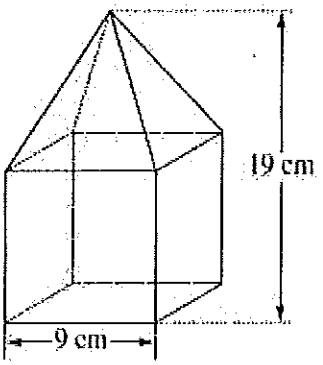
2013

4. A square pyramid fits exactly on top of a cube to form a solid.



NOT TO SCALE

What is the volume of the solid?

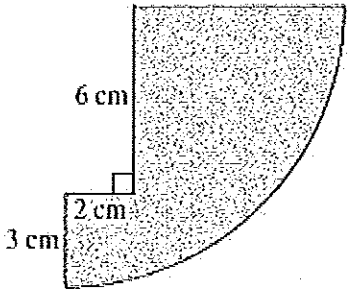
(A) 513 cm^3

(B) 999 cm^3

(C) 1242 cm^3

(D) 1539 cm^3

5. The shaded region shows a quadrant with a rectangle removed.



NOT TO SCALE

What is the area of the shaded region, to the nearest cm^2?

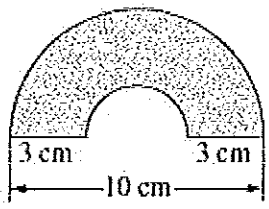
(A) 38 cm^2

(B) 52 cm^2

(C) 61 cm^2

(D) 70 cm^2

A logo is designed using half of an annulus.



NOT TO SCALE

What is the area of the logo, to the nearest cm^2?

(A) 25 cm^2

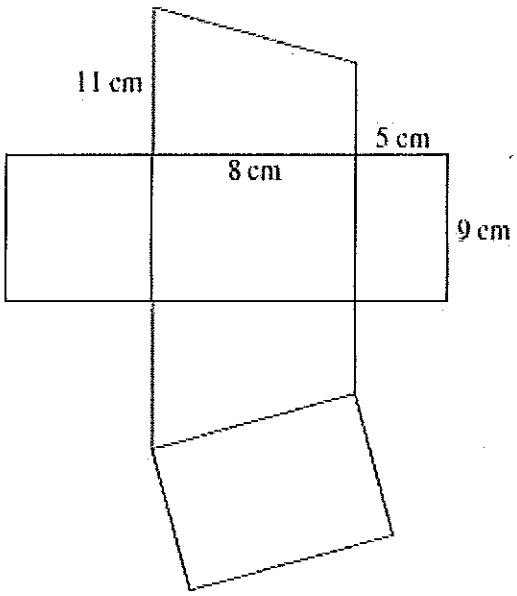
(B) 33 cm^2

(C) 132 cm^2

(D) 143 cm^2

6.

A net is made using four rectangles and two trapeziums. It is folded to form a solid.



NOT TO SCALE

What is the volume of the solid, in cm^3?

(A) 360 cm^3

(B) 434 cm^3

(C) 440 cm^3

(D) 576 cm^3

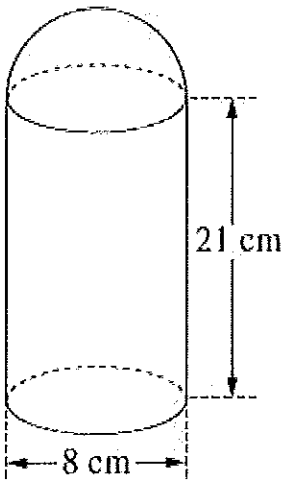
(d) A rectangular wooden chopping board is advertised as being 17 cm by 25 cm, with each side measured to the nearest centimetre.

(i) Calculate the percentage error in the measurement of the longer side. 1

(ii) Between what lower and upper limits does the actual area of the top of the chopping board lie? 2

2012

The solid shown is made of a cylinder with a hemisphere (half a sphere) on top.



NOT TO SCALE

What is the total surface area of the solid, to the nearest square centimetre?

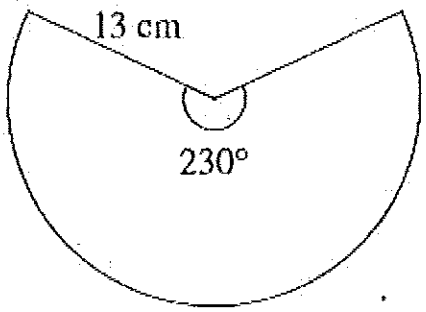
(A) 628 cm^2

(B) 679 cm^2

(C) 729 cm^2

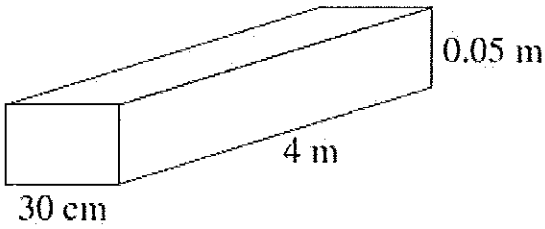
(D) 829 cm^2

The sector shown has a radius of 13 cm and an angle of 230°.



NOT TO SCALE

What is the perimeter of the sector to the nearest centimetre?



NOT TO SCALE

What is the volume of this rectangular prism in cubic centimetres?

(A) 6 cm^3

(B) 600 cm^3

(C) 60 000 cm^3

(D) 6 000 000 cm^3