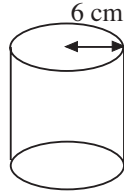


**UNIT 14** *Volumes***CSEC Revision Test**

1. A cylindrical can has a radius of 6 centimetres.  
The capacity of the can is  $2000 \text{ cm}^3$ .

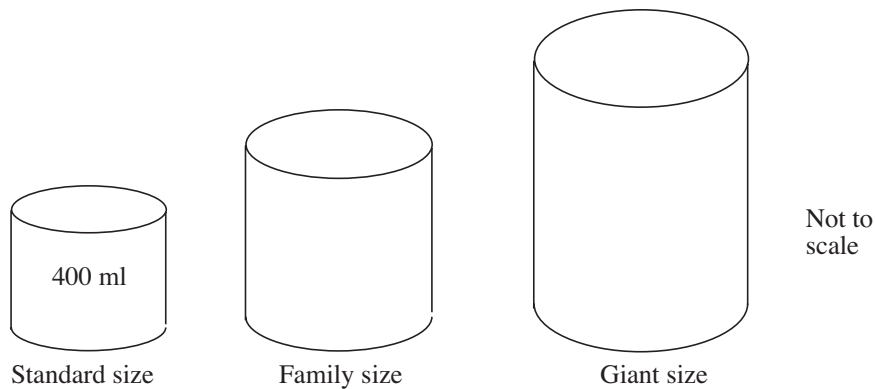


Calculate the height of the can.

Give your answer correct to 1 decimal place.

(3 marks)

2. Tins of SUPER SOUP come in three sizes.



The height and the radius of the family size tin are each 1.2 times the height and radius of the standard size tin.

- (a) The volume of the standard size tin is 400 ml.

Calculate the volume of a family size tin.

(2 marks)

The height of the giant size tin is 1.2 times the height of the family size tin. The radius of the giant size tin is 1.5 times the radius of the family size tin.

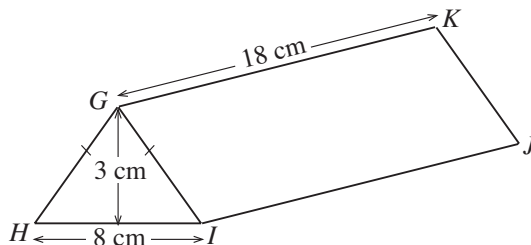
- (b) Calculate the volume of the giant size tin.

(4 marks)

# UNIT 14 *Volumes*

# CSEC Revision Test

3. (a) The triangular prism, shown in the diagram below, **not drawn to scale**, is 18 cm long. Triangle  $GHI$  has a height of 3 cm.  $HI = 8$  cm and  $GH = GI$ .

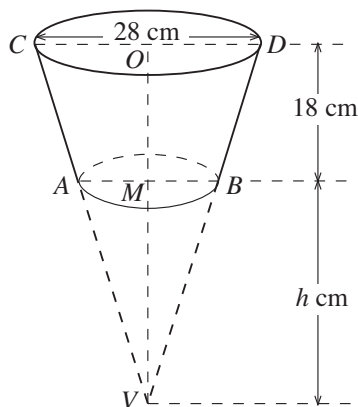


Calculate

- (i) the area of triangle  $GHI$
  - (ii) the volume of the triangular prism
  - (iii) the length of  $GI$
  - (iv) the TOTAL surface area of the prism. (8 marks)
- (b) The triangular prism is melted down and made into a cube.  
Calculate the length of an edge of the cube. (3 marks)

(CXC)

4.



The diagram above, **not drawn to scale**, shows  $ABCD$ , a bucket of height 18 cm. The bucket is made by removing a cone  $VAB$ , of height  $h$  cm, from a larger cone  $VCD$ .

$AMB$ , the diameter of the circular base of the bucket is  $17\frac{1}{2}$  cm.  $COD$ , the diameter of the open top, is 28 cm.

- (i) Show, giving reasons, that  $\frac{h}{18 + h} = \frac{5}{8}$ .
- (ii) Determine the value of  $h$ .

(8 marks)  
(CXC)

**(TOTAL MARKS: 28)**

# UNIT 14 *Volumes*

# CSEC Revision Test

## ANSWERS

1.  $\pi \times 6^2 \times h = 2000$  B1

$$h = \frac{2000}{36\pi} \approx 17.7$$

M1 A1 (3 marks)

2. (a) Volume =  $400 \times (1.2)^3 = 691.2$  ml M1 A1

(b) Volume =  $400 \times (1.2)^3 \times (1.2) \times (1.5)^2$  M2 A1

$$= 1866.24 \text{ ml}$$

A1 (6 marks)

3. (a) (i) Area =  $\frac{1}{2} \times 8 \times 3 = 12 \text{ cm}^2$  M1 A1

$$\text{Volume} = 18 \times 12 = 216 \text{ cm}^3$$

M1 A1

$$GI = \sqrt{3^2 + 4^2} = 5 \text{ cm}$$

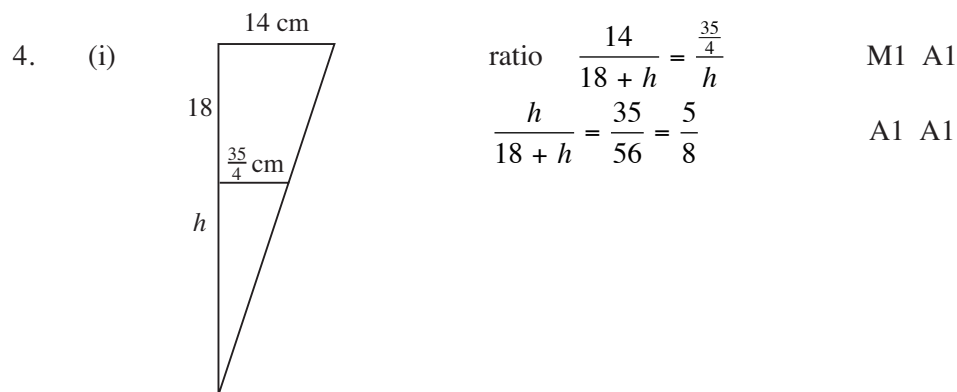
M1 A1

(iv) Surface area =  $2 \times 12 + 2 \times (5 \times 18) + 8 \times 18$

$$= 348 \text{ cm}^2$$

M1 A1

(b) If  $x =$  length of edge of cube,  $x^3 = 216$ ,  $x = (216)^{\frac{1}{3}} = 6 \text{ cm}$  M1 A1 A1 (11 marks)



(ii)  $8h = 5(18+h) = 90 + 5h$  M1 A1

$$3h = 90$$

A1

$$h = 30 \text{ cm}$$

A1 (8 marks)

**(TOTAL MARKS: 28)**