

11

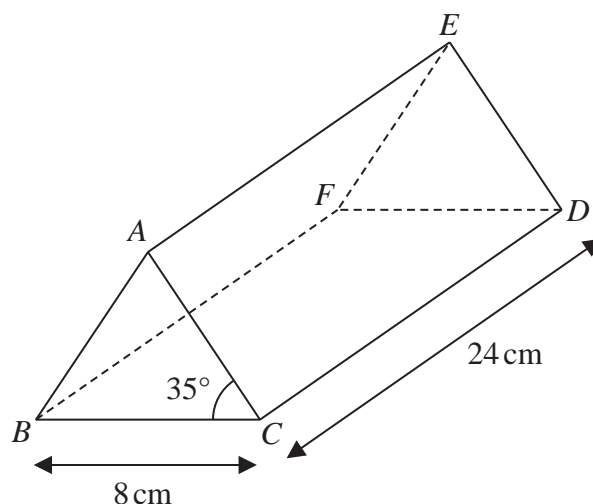
Diagram **NOT**  
accurately drawn

Figure 3

Figure 3 shows a solid right triangular prism  $ABCDEF$ .

A cross section  $ABC$  of the prism is an isosceles triangle in which  $AB = AC$ .

$$\angle ACB = 35^\circ \quad CB = 8 \text{ cm} \quad CD = 24 \text{ cm}$$

- (a) Calculate the total surface area, in  $\text{cm}^2$  to 3 significant figures, of the prism.

(5)

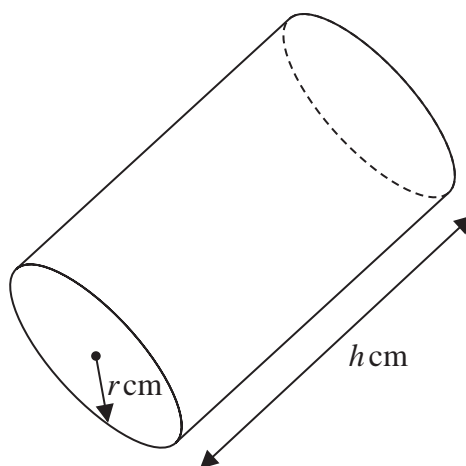
Diagram **NOT**  
accurately drawn

Figure 4

Figure 4 shows a solid right circular cylinder with radius  $r \text{ cm}$  and length  $h \text{ cm}$ .

The total surface area of the cylinder is  $(224 + 60\sqrt{3})\pi \text{ cm}^2$

Given that  $r = 3\sqrt{3} + 2$

- (b) find the exact value of  $h$ .

Show your working clearly and give your answer in the form  $a\sqrt{27}$  where  $a$  is an integer.

(6)



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### Question 11 continued

$$\left[ \begin{array}{l} \text{Area of triangle} = \frac{1}{2}ab \sin C \\ \text{Curved surface area of cylinder} = 2 \pi rh \end{array} \right]$$



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(Total for Question 11 is 11 marks)

