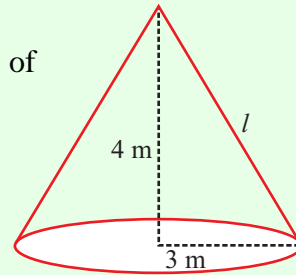


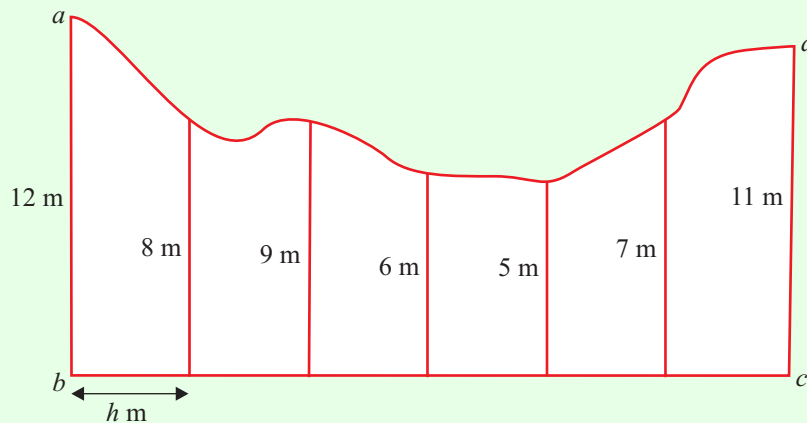
**AREA & VOLUME (Q 1, PAPER 2)**

**1997**

- 1 (a) Find the slant height,  $l$ , of a cone which has perpendicular height of 4 cm and base with radius of length 3 cm.  
Write down the curved surface area of the cone in terms of  $\pi$ .



- (b) The diagram shows a sketch of a piece of paper  $abcd$  with one uneven edge. At equal intervals of  $h$  cm along  $[bc]$ , perpendicular measurements of 12 cm, 8 cm, 9 cm, 6 cm, 5 cm, 7 cm and 11 cm are made to the top edge.



Use Simpson's Rule the area of the piece of paper is estimated to be  $180 \text{ cm}^2$ . Calculate the value of  $h$ . [See Tables, page 42.]

- (c) Find the volume of a solid sphere which has radius of length 2.1 cm. Give your answer correct to the nearest  $\text{cm}^3$ . Take  $\frac{22}{7}$  as an approximation of  $\pi$ .

This sphere and a solid cube with edge of length 3 cm are completely submerged in water in a cylinder. The cylinder has radius of length  $r$  cm.

Both the sphere and the cube are then removed from the cylinder. The water level drops by 4 cm. Find  $r$ , correct to one place of decimals. [Take  $\pi = \frac{22}{7}$ .]

**ANSWERS**

- 1 (a) 5 cm,  $15\pi$   
(b) 4 cm  
(c)  $39 \text{ cm}^3$ , 2.3 cm