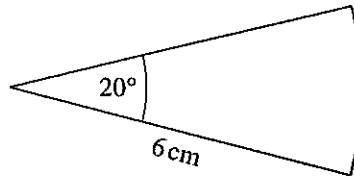


# IGCSE – Circle – arc/area of sectors/volume

May 02 Paper 4

- 8 (a) A sector of a circle, radius 6 cm, has an angle of  $20^\circ$ .

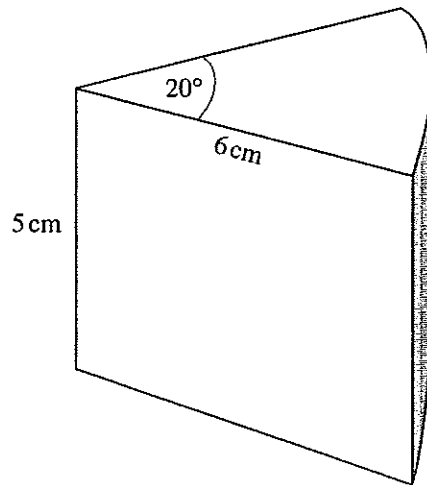


NOT TO SCALE

Calculate

- (i) the area of the sector, [2]  
(ii) the arc length of the sector. [2]

(b)



NOT TO SCALE

A whole cheese is a cylinder, radius 6 cm and height 5 cm.  
The diagram shows a slice of this cheese with sector angle  $20^\circ$ .

Calculate

- (i) the volume of the slice of cheese, [2]  
(ii) the total surface area of the slice of cheese. [4]

(c) The radius,  $r$ , and height,  $h$ , of cylindrical cheeses vary but the volume remains constant.

- (i) Which one of the following statements  $A$ ,  $B$ ,  $C$  or  $D$  is true?

$A$ :  $h$  is proportional to  $r$ .

$B$ :  $h$  is proportional to  $r^2$ .

$C$ :  $h$  is inversely proportional to  $r$ .

$D$ :  $h$  is inversely proportional to  $r^2$ . [2]

- (ii) What happens to the height  $h$  of the cylindrical cheese when the volume remains constant but the radius is doubled? [2]