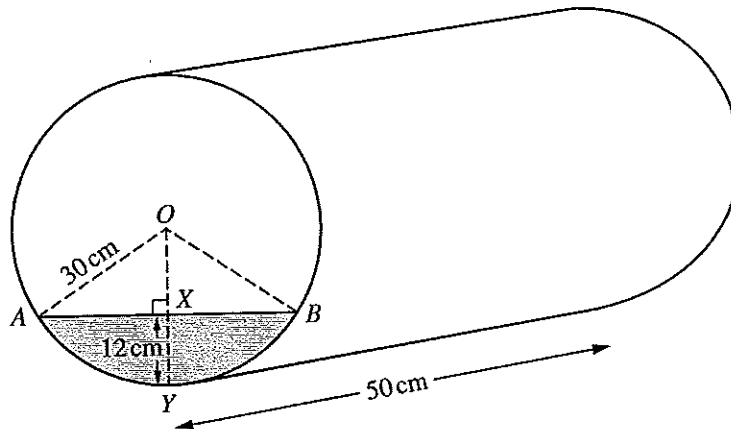


# CSE – Area of a sector/volume

Oct 03 Paper 4

- 6 (a) Calculate the volume of a cylinder with radius 30 cm and height 50 cm. [2]

(b)



NOT TO SCALE

A cylindrical tank, radius 30 cm and length 50 cm, lies on its side. It is partially filled with water. The shaded segment  $AXBY$  in the diagram shows the cross-section of the water. The greatest depth,  $XY$ , is 12 cm.  $OA = OB = 30$  cm.

- (i) Write down the length of  $OX$ . [1]  
 (ii) Calculate the angle  $AOB$  correct to two decimal places, showing all your working. [3]
- (c) Using angle  $AOB = 106.3^\circ$ , find  
 (i) the area of the sector  $AOBY$ , [3]  
 (ii) the area of triangle  $AOB$ , [2]  
 (iii) the area of the shaded segment  $AXBY$ . [1]
- (d) Calculate the volume of water in the cylinder, giving your answer  
 (i) in cubic centimetres, [2]  
 (ii) in litres. [1]
- (e) How many more litres must be added to make the tank half full? [2]