

Fig. 1

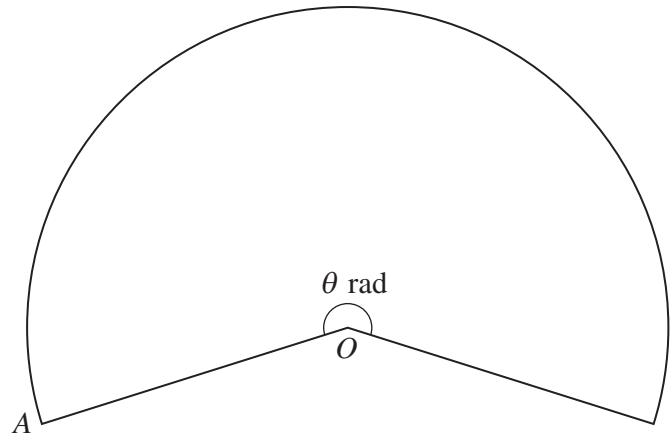


Fig. 2

Fig. 1 shows a hollow cone with no base, made of paper. The radius of the cone is  $6\text{ cm}$  and the height is  $8\text{ cm}$ . The paper is cut from  $A$  to  $O$  and opened out to form the sector shown in Fig. 2. The circular bottom edge of the cone in Fig. 1 becomes the arc of the sector in Fig. 2. The angle of the sector is  $\theta$  radians. Calculate

- (i) the value of  $\theta$ , [4]
- (ii) the area of paper needed to make the cone. [2]