

- 3 Fig. 3 shows a circle with centre  $O$  and radius 1 unit. Points  $A$  and  $B$  lie on the circle with angle  $AOB = \theta$  radians.  $C$  lies on  $AO$ , and  $BC$  is perpendicular to  $AO$ .

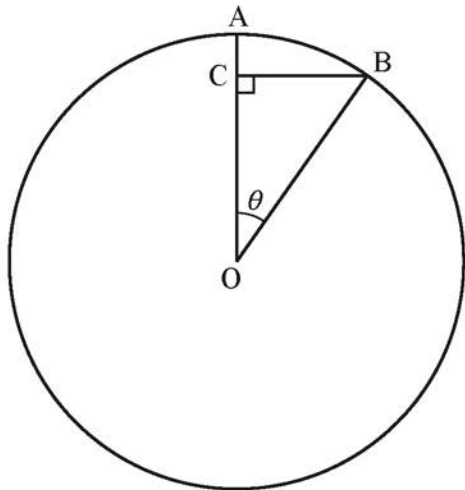


Fig. 3

Show that, when  $\theta$  is small,  $AC \approx \frac{1}{2}\theta^2$ .