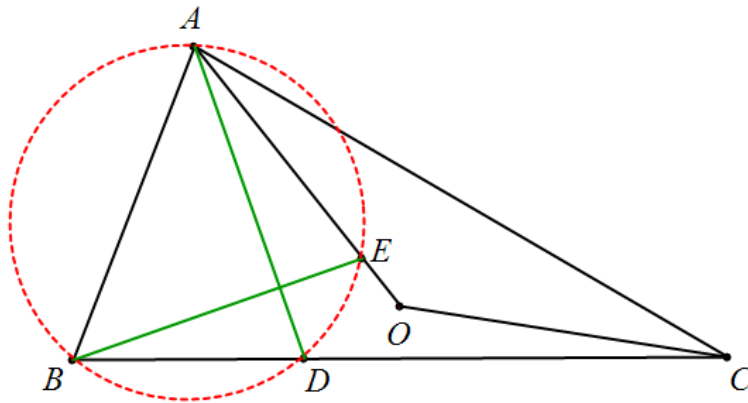


four points in circle



**Example 1 68 :** As shown in Figure 1,  $\triangle ABC$ ,  $O$  is the circumcenter,  $AD$  is the angle bisector,  $BE \perp AD$  intersects  $AO$  at  $E$ , and prove that:  $A, B, D$ , and  $E$  share a circle.

$$\frac{E-B}{O-A} = \frac{A-D}{A-C} \frac{A-O}{C-O} \frac{E-B}{D-A} \frac{D-A}{C-B},$$

$$\frac{D-A}{D-A} = \frac{A-D}{A-D} \frac{C-A}{A-B} \frac{C-O}{C-O}$$