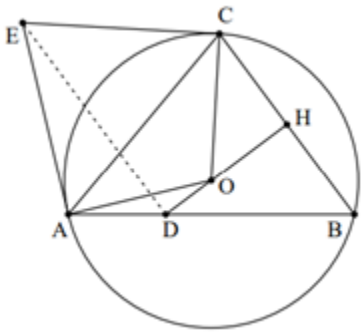

Example 173 : As shown in Figure 3, in $\triangle ABC$, O is the circumcenter, $EA \perp AO$, $EC \perp CO$, the point O is on AB, and $DO \perp BC$, to prove: E, D, O, and C are all circles.

$$\frac{E-O}{E-A}\frac{D-A}{D-O}=\left(\frac{C-A}{C-E}\frac{O-E}{O-A}\right)\left(\frac{B-C}{D-O}\frac{B-A}{B-C}\frac{C-O}{C-A}\right)\left(\frac{O-A}{E-A}\frac{E-C}{C-O}\right)\frac{D-A}{B-A}.$$