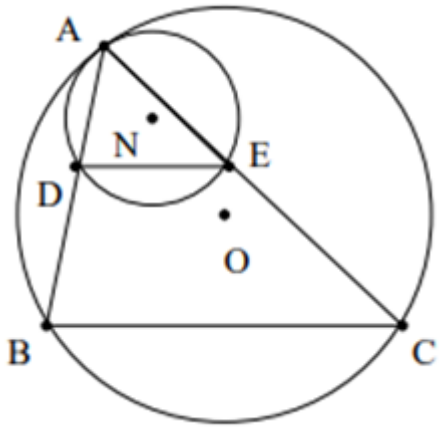
Example 95 : As shown in Figure 3 , in △ *ABC* , *D* , *E* are on *AB* , *AC* *respectively* , *DE* // *BC* , *N* , *O are* the circumcenters of △ *ADE* , △ *ABC* *respectively, to prove: A* , *N* , *O* are collinear .



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

is used: ∠DEA + ∠NAD = 90 ° .

Extension: As shown in the figure, in △ *ABC* , *D* , *E* are on *AB* , *AC respectively* , *N* , *O are* the circumcenters of △ *ADE* , △ *ABC respectively. Prove: A* , *N* , *O are* collinear ⇔ *DE* // *BC* .