



Example 1 45 : As shown in Figure 3, in $\triangle ABC$, D , E , and F are the midpoints of BC , CA , and AB respectively, N is the midpoint of the inferior arc AB , $NK \perp CA$ is at K , and the proof is: $\angle DFK + \angle KFE = 180^\circ$.

$$\frac{D-F}{F-K} / \frac{F-K}{F-E} = -\frac{F-E}{B-C} \frac{F-D}{A-C} \left(\frac{A-C}{A-K} \right)^2 \left(\frac{K-A}{K-F} \frac{N-F}{N-A} \right)^2 \left(\frac{C-B}{C-A} \left(\frac{N-A}{N-F} \right)^2 \right).$$

Explanation : $\angle BCA + 2\angle ANF = 180^\circ \Leftrightarrow \frac{C-B}{C-A} \left(\frac{N-A}{N-F} \right)^2 \in R^-.$