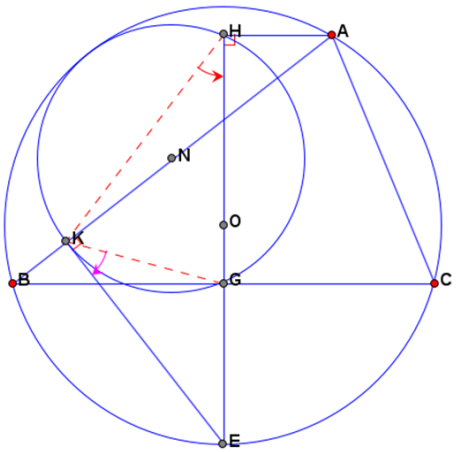
Example 154 : As shown in Figure 3, in $\triangle ABC$, $O$ is the circumcenter, $G$ is the midpoint of $BC$, $OG$ intersects the circumscribed circle of $\triangle ABC$ on $E$, $EN \perp AB$ on $K$, $AH \perp OG$ on $H$, to prove: $\angle GKE = \angle GHK$.




$$\frac{K-G}{K-E}/\frac{H-G}{H-K}=\left(\frac{A-E}{A-K}/\frac{H-G}{H-K}\right)\left(\frac{K-G}{K-B}\frac{E-B}{E-G}\right)\left(\frac{B-K}{B-G}/\frac{E-K}{E-G}\right)\left(\frac{B-G}{B-E}/\frac{C-E}{C-B}\right)$$

$$\left(\frac{C-E}{C-B}/\frac{A-E}{A-B}\right)\frac{A-K}{B-A}$$