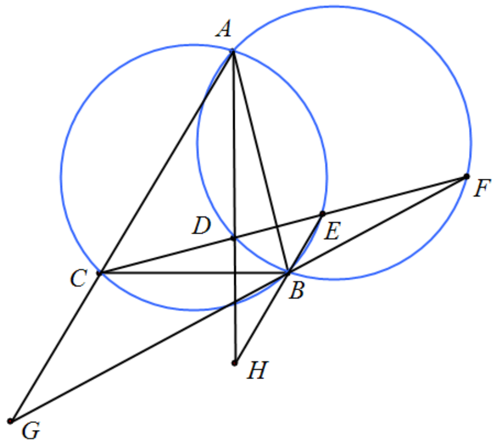


Example 158 : As shown in Figure 3, there is a point $D$ inside $\triangle ABC$, the straight line $CD$ intersects the circumcircles of $\triangle ABC$ and $\triangle ADB$ at $E$ and $F$, $AC$ intersects $BF$ at $G$, and $AD$ intersects $EB$ at $H$. Prove: $\angle AGB = \angle AHB$.

$$\frac{\frac{H-A}{H-E}}{\frac{G-A}{G-F}}=\frac{\frac{B-A}{H-E}}{\frac{G-A}{C-F}}\frac{\frac{H-A}{C-F}}{\frac{B-A}{G-F}},$$