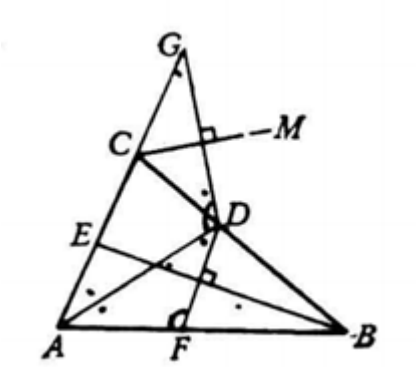
Example 109 : As shown in Figure 1, it is known that AD and BE *are* the bisectors of $\angle A$ and $\angle B$ of $\triangle ABC$, $DF \perp BE$ intersects AB at point F, DG is perpendicular to the *bisector* CM of the exterior angle of $\angle C$, and intersects the extension of AC line at point G. Prove : $\angle AFD = \angle ADG$. _



$$\left(\frac{\frac{F-A}{F-D}}{\frac{D-A}{D-G}}\right)^2 = \frac{\frac{A-C}{A-D}\frac{C-B}{D-F}\frac{G-D}{C-A}}{\frac{A-D}{A-B}\frac{}{A-B}\frac{}{D-G}}\left(\frac{A-F}{A-B}\right)^2$$