Proof Without Words: A Sum and Product of Three Tangents

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THEOREM. If $\alpha$, $\beta$, and $\gamma$ denote angles in an acute triangle, then

$$\tan \alpha + \tan \beta + \tan \gamma = \tan \alpha \tan \beta \tan \gamma.$$ 

Proof.

Note: The theorem holds for any angles $\alpha$, $\beta$, $\gamma$ (none an odd multiple of $\pi/2$) whose sum is $\pi$. 