Ismeretes, hogy $a = 2r\sin\alpha$, $b = 2r\sin\beta$, $c = 2r\sin\gamma$. Így

$$\begin{aligned}
\frac{a}{\cos\alpha} + \frac{b}{\cos\beta} + \frac{c}{\cos\gamma} &= 2r(\operatorname{tg}\alpha + \operatorname{tg}\beta + \operatorname{tg}\gamma) = \\
&= 2r\big\{\operatorname{tg}\alpha + \operatorname{tg}\beta - (\operatorname{tg}\alpha + \operatorname{tg}\beta)/(1 - \operatorname{tg}\alpha\operatorname{tg}\beta)\big\} = \\
&= -2r\operatorname{tg}\alpha\operatorname{tg}\beta\big\{(\operatorname{tg}\alpha + \operatorname{tg}\beta)/(1 - \operatorname{tg}\alpha\operatorname{tg}\beta)\big\} = \\
&= 2r\operatorname{tg}\alpha\operatorname{tg}\beta\big[-\operatorname{tg}(\alpha + \beta)\big] = 2r\operatorname{tg}\alpha\operatorname{tg}\beta\operatorname{tg}\gamma.
\end{aligned}$$