

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

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