

Zadatak 28. Ako je $\alpha + \beta = \frac{\pi}{4}$, koliko je $(1 + \operatorname{tg} \alpha)(1 + \operatorname{tg} \beta)$?

Rješenje. $\alpha + \beta = \frac{\pi}{4}$:

$$\begin{aligned}\operatorname{tg}(\alpha + \beta) &= \frac{\operatorname{tg} \alpha + \operatorname{tg} \beta}{1 - \operatorname{tg} \alpha \cdot \operatorname{tg} \beta} = \operatorname{tg} \frac{\pi}{4} = 1 \implies \operatorname{tg} \alpha + \operatorname{tg} \beta = 1 - \operatorname{tg} \alpha \cdot \operatorname{tg} \beta \\ (1 + \operatorname{tg} \alpha)(1 + \operatorname{tg} \beta) &= \operatorname{tg} \beta + 1 + \operatorname{tg} \alpha + \operatorname{tg} \alpha \cdot \operatorname{tg} \beta = \underbrace{\operatorname{tg} \alpha + \operatorname{tg} \beta}_{1 - \operatorname{tg} \alpha \cdot \operatorname{tg} \beta} + 1 + \operatorname{tg} \alpha \cdot \operatorname{tg} \beta \\ &= 1 - \operatorname{tg} \alpha \cdot \operatorname{tg} \beta + 1 + \operatorname{tg} \alpha \cdot \operatorname{tg} \beta = 2\end{aligned}$$