Zadatak 14. Ako je $\operatorname{tg} x + \operatorname{ctg} x = 4$, koliko je $\sin x + \cos x$?

Rješenje.

$$\operatorname{tg} x + \operatorname{ctg} x = \frac{\sin x}{\cos x} + \frac{\cos x}{\sin x} = \frac{\sin^2 x + \cos^2 x}{\sin x \cdot \cos x} = \frac{1}{\sin x \cdot \cos x} = 4$$

$$\Longrightarrow \sin x \cdot \cos x = \frac{1}{4};$$

$$(\sin x + \cos x)^2 = \sin^2 x + 2 \sin x \cos x + \cos^2 x = 1 + 2 \sin x \cos x = 1 + 2 \cdot \frac{1}{4} = \frac{3}{2};$$

$$\Longrightarrow \sin x + \cos x = \pm\sqrt{\frac{3}{2}}$$