

**Zadatak 22.** Ako je  $\operatorname{tg} \frac{x}{2} = m$ , gdje je  $m$  realni broj, koliko je  $\frac{1 - 2 \sin^2 \frac{x}{2}}{1 + \sin x}$ ?

**Rješenje.**

$$\begin{aligned} \frac{1 - 2 \sin^2 \frac{x}{2}}{1 + \sin x} &= \frac{\cos x}{1 + \sin x} = \frac{\cos x}{1 + 2 \sin \frac{x}{2} \cos \frac{x}{2}} = \frac{\cos x}{\sin^2 \frac{x}{2} + \cos^2 \frac{x}{2} + 2 \sin \frac{x}{2} \cos \frac{x}{2}} \\ &= \frac{\cos^2 \frac{x}{2} - \sin^2 \frac{x}{2}}{(\sin \frac{x}{2} + \cos \frac{x}{2})^2} = \frac{\cos \frac{x}{2} - \sin \frac{x}{2}}{\cos \frac{x}{2} + \sin \frac{x}{2}} = \frac{1 - \operatorname{tg} \frac{x}{2}}{1 + \operatorname{tg} \frac{x}{2}} = \frac{1 - m}{1 + m}. \end{aligned}$$