

Zadatak 3. Koliko je $\operatorname{tg} 2\alpha$ ako je $\cos \alpha = \frac{2}{3}$, $\alpha \in \left\langle \frac{3\pi}{2}, 2\pi \right\rangle$?

Rješenje. $\alpha \in \left\langle \frac{3\pi}{2}, 2\pi \right\rangle$, $\sin \alpha < 0$

$$\sin \alpha = -\sqrt{1 - \cos^2 \alpha} = -\sqrt{1 - \frac{4}{9}} = -\frac{\sqrt{5}}{3}$$

$$\operatorname{tg} \alpha = \frac{\sin \alpha}{\cos \alpha} = -\frac{\sqrt{5}}{2}$$

$$\operatorname{tg} 2\alpha = \frac{2 \operatorname{tg} \alpha}{1 - \operatorname{tg}^2 \alpha} = \frac{2 \cdot \left(-\frac{\sqrt{5}}{2}\right)}{1 - \frac{5}{4}} = \frac{-\sqrt{5}}{-\frac{1}{4}} = 4\sqrt{5}.$$