

Zadatak 23. Ako je $\sin \alpha = 0.8$, $\frac{\pi}{2} < \alpha < \pi$, $\cos \beta = \frac{7}{25}$, $\frac{3\pi}{2} < \beta < 2\pi$, koliko je $\operatorname{tg}(\alpha + \beta)$?

Rješenje. $\frac{\pi}{2} < \alpha < \pi$, $\frac{3\pi}{2} < \beta < 2\pi$:

$$\cos \alpha = -\sqrt{1 - \sin^2 \alpha} = -\sqrt{1 - 0.64} = -0.6 = -\frac{3}{5};$$

$$\sin \beta = -\sqrt{1 - \cos^2 \beta} = -\sqrt{1 - \frac{49}{625}} = -\sqrt{\frac{576}{625}} = -\frac{24}{25};$$

$$\operatorname{tg} \alpha = \frac{\sin \alpha}{\cos \alpha} = \frac{0.8}{-0.6} = -\frac{8}{6} = -\frac{4}{3};$$

$$\operatorname{tg} \beta = \frac{\sin \beta}{\cos \beta} = \frac{-\frac{24}{25}}{\frac{7}{25}} = -\frac{24}{7};$$

$$\operatorname{tg}(\alpha + \beta) = \frac{\operatorname{tg} \alpha + \operatorname{tg} \beta}{1 - \operatorname{tg} \alpha \cdot \operatorname{tg} \beta} = \frac{-\frac{4}{3} - \frac{24}{7}}{1 - \left(-\frac{4}{3}\right) \cdot \left(-\frac{24}{7}\right)} = \frac{-\frac{100}{21}}{-\frac{25}{7}} = \frac{4}{3}.$$