

**Zadatak 3.** Izračunaj  $\cos(t+s)$  i  $\cos(t-s)$  ako je  $\sin t = \frac{3}{5}$ ,  $\sin s = \frac{8}{17}$ , te  $0 < t < \frac{\pi}{2}$ ,  $\frac{\pi}{2} < s < \pi$ .

**Rješenje.**  $\sin t = \frac{3}{5}$ ,  $0 < t < \frac{\pi}{2} \implies \cos t > 0$ :

$$\cos t = \sqrt{1 - \sin^2 t} = \sqrt{1 - \frac{9}{25}} = \sqrt{\frac{16}{25}} = \frac{4}{5}$$

$\sin s = \frac{8}{17}$ ,  $\frac{\pi}{2} < s < \pi \implies \cos s < 0$ :

$$\cos s = -\sqrt{1 - \sin^2 s} = -\sqrt{1 - \frac{64}{289}} = -\sqrt{\frac{225}{289}} = -\frac{15}{17}$$

$$\cos(t+s) = \cos t \cos s - \sin t \sin s = \frac{4}{5} \cdot \left(-\frac{15}{17}\right) - \frac{3}{5} \cdot \frac{8}{17} = -\frac{84}{85};$$

$$\cos(t-s) = \cos t \cos s + \sin t \sin s = \frac{4}{5} \cdot \left(-\frac{15}{17}\right) + \frac{3}{5} \cdot \frac{8}{17} = -\frac{36}{85}.$$