Zadatak 17. Ako je $\alpha - \beta = \frac{2\pi}{3}$; $\sin\alpha = -\frac{4\sqrt{3}}{7}$, $\pi < \alpha < \frac{3\pi}{2}$, koliko je $\cos\beta$?

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

$$\cos\alpha = -\sqrt{1-\sin^2\alpha} = -\sqrt{1-\frac{48}{49}} = -\frac{1}{7}$$

$$\cos(\alpha-\beta) = \cos\alpha\cos\beta + \sin\alpha\sin\beta = \cos\frac{2\pi}{3} = -\frac{1}{2}$$

$$\sin(\alpha-\beta) = \sin\alpha\cos\beta - \cos\alpha\sin\beta = \sin\frac{2\pi}{3} = \frac{\sqrt{3}}{2}$$

$$-\frac{1}{7}\cdot\cos\beta + \left(-\frac{4\sqrt{3}}{7}\right)\cdot\sin\beta = -\frac{1}{2}$$

$$-\frac{4\sqrt{3}}{7}\cdot\cos\beta - \left(-\frac{1}{7}\right)\cdot\sin\beta = \frac{\sqrt{3}}{2}$$

$$-\frac{1}{7}\cdot\cos\beta - \frac{4\sqrt{3}}{7}\cdot\sin\beta = -\frac{1}{2}$$

$$-\frac{4\sqrt{3}}{7}\cdot\cos\beta + \frac{1}{7}\cdot\sin\beta = \frac{\sqrt{3}}{2} \quad \Big/\cdot 4\sqrt{3}$$

$$\left.\begin{aligned} -\frac{1}{7}\cdot\cos\beta - \frac{4\sqrt{3}}{7}\cdot\sin\beta &= -\frac{1}{2} \\ -\frac{48}{7}\cdot\cos\beta + \frac{4\sqrt{3}}{7}\cdot\sin\beta &= \frac{12}{2} \end{aligned}\right\} +$$

$$-\frac{49}{7}\cos\beta = \frac{11}{2} \quad \Big/\cdot\frac{7}{49}$$

$$\cos\beta = -\frac{11}{14}.$$