

Zadatak 11. Izračunaj $\cos x$ ako je
 $5(\sin^2 x - \cos^2 x) = \sin x - 2$, $x \in [8, 9]$.

Rješenje.

$$x \in [8, 9]$$

$$\left. \begin{array}{l} 8 \text{ rad} = 458.366^\circ = 98.366^\circ + 360^\circ \\ 9 \text{ rad} = 515.66^\circ = 155.66^\circ + 360^\circ \end{array} \right\} \Rightarrow \text{II. kvadrant} \Rightarrow \begin{array}{l} \sin x > 0, \\ \cos x < 0 \end{array}$$

$$5(\sin^2 x - \cos^2 x) = \sin x - 2$$

$$5(\sin^2 x - 1 + \sin^2 x) = \sin x - 2$$

$$10 \sin^2 x - \sin x - 3 = 0$$

$$\sin x_{1,2} = \frac{1 \pm \sqrt{1 + 120}}{20} = \frac{1 \pm 11}{20} \Rightarrow \sin x = \frac{3}{5} \quad (\sin x = -\frac{1}{2} < 0 \text{ nije rješenje})$$

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