

Kalkulus 9. gyakorlat megoldások

2025. október 10.

1.feladat

a, $\frac{\sqrt{3}}{2}$

b, $-\frac{\sqrt{3}}{2}$

c, $-\frac{\sqrt{3}}{2}$

d, 0

e, 0

f, $-\sqrt{3}$

g, $-\sqrt{3}$

2.feladat

a, $x_1 = \frac{\pi}{6}, x_2 = \pi - \frac{\pi}{6} = \frac{5\pi}{6}$

b, $x_1 = \frac{\pi}{4}, x_2 = \frac{\pi}{4} + \pi = \frac{5\pi}{4}$

c, $x_1 = \frac{5\pi}{6}, x_2 = \pi + \frac{5\pi}{6} = \frac{11\pi}{6}$

d, $x_1 = \frac{5\pi}{6}, x_2 = 2\pi - \frac{5\pi}{6} = \frac{7\pi}{6}$

3.feladat

a, $\frac{\pi}{2}$

b, $\frac{\pi}{6}$

c, $-\frac{\pi}{3}$

d, $\frac{\pi}{4}$

e, $\frac{\pi}{3}$

f, $\frac{5\pi}{6}$

g, $\frac{\pi}{2}$

4.* feladat

$$\sin^2\left(\frac{\pi}{12}\right) = \frac{1 - \cos(2 \cdot \pi/12)}{2} = \frac{1 - \sqrt{3}/2}{2} \xrightarrow{\pi/12 \text{ hegyeszög}} \sin\left(\frac{\pi}{12}\right) = \sqrt{\frac{1 - \sqrt{3}/2}{2}}$$

$$\cos\left(\frac{7\pi}{12}\right) = \cos\left(\frac{\pi}{12}\right) \cos\left(\frac{\pi}{2}\right) - \sin\left(\frac{\pi}{12}\right) \sin\left(\frac{\pi}{2}\right) = -\sin\left(\frac{\pi}{12}\right)$$