④

$2\sin^2 x + \cos(\pi - x) = 2$ ⟩ $\cos x = \cos(-\alpha)$

$2(1-\cos^2 x) + \cos(x-\pi) = 2$

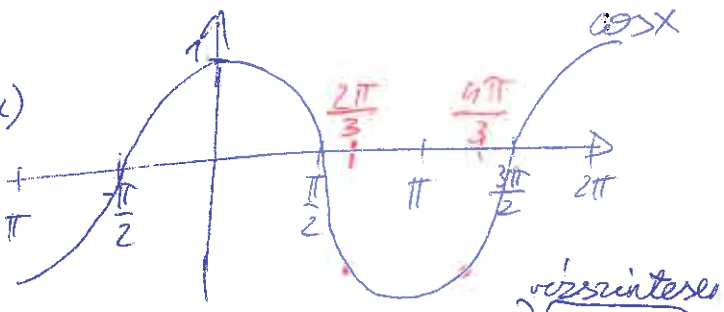
$2 - 2\cos^2 x - \cos x = 2$

$-2\cos^2 x - \cos x = 0$

$2\cos^2 x + \cos x = 0$

$\cos x(2\cos x + 1) = 0$

Ⓐ



vízszintesen

„Ha a (cos) függvényt $(-\pi)$-vel eltoljuk, akkor éppen a $(-\cos)$ függvényt kapjuk."

$\cos x = 0$

$\boxed{x_1 = \frac{\pi}{2} + k \cdot \pi}$

$2\cos x = -1$

$\cos x = -\frac{1}{2}$

$\boxed{x_2 = \frac{2\pi}{3} + k \cdot 2\pi}$

$\boxed{x_3 = -\frac{2\pi}{3} + k \cdot 2\pi}$

$\boxed{k \in \mathbb{Z}}$

⑤

$a_1; a_2; a_3$ mértani sorozat

$a_1 = \frac{a_2}{q}$; $a_3 = a_2 \cdot q$

① $\frac{a_2}{q} \cdot a_2 \cdot a_2 q = -8 \Rightarrow a_2^3 = -8 \Rightarrow \boxed{a_2 = -2}$

② $\frac{a_2}{q} + a_2 + a_3 q = 3$

$\frac{-2}{q} - 2 - 2q = 3 \quad / \cdot q$

$-2 - 2q - 2q^2 = 3q$

$0 = 2q^2 + 5q + 2$

$q_{1;2} = \frac{-5 \pm \sqrt{25-16}}{4} = \frac{-5 \pm 3}{4}$

$q_1 = -\frac{1}{2}$

$q_2 = -2$

I.) Ha $q_1 = -\frac{1}{2} \Rightarrow a_1 = 4$; $a_2 = -2$; $a_3 = 1$

II.) Ha $q_2 = -2 \Rightarrow a_1 = 1$; $a_2 = -2$; $a_3 = 4$