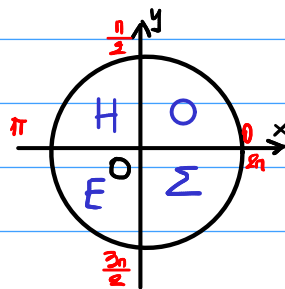


22/01/2026

- $\eta\mu x = \eta\mu a \Rightarrow x = 2k\pi + a$ ή $x = 2k\pi + \pi - a$, $k \in \mathbb{Z}$
- $\sigma\upsilon\nu x = \sigma\upsilon\nu a \Rightarrow x = 2k\pi + a$ ή $x = 2k\pi - a$, $k \in \mathbb{Z}$
- $\epsilon\phi x = \epsilon\phi a \Rightarrow x = k\pi + a$, $k \in \mathbb{Z}$
- $\sigma\phi x = \sigma\phi a \Rightarrow x = k\pi + a$, $k \in \mathbb{Z}$



Βασικές εξισώσεις

- $\eta\mu x = 0 \Rightarrow x = k\pi$, $k \in \mathbb{Z}$
- $\eta\mu x = 1 \Rightarrow x = 2k\pi + \frac{\pi}{2}$, $k \in \mathbb{Z}$
- $\eta\mu x = -1 \Rightarrow x = 2k\pi - \frac{\pi}{2}$, $k \in \mathbb{Z}$
- $\sigma\upsilon\nu x = 0 \Rightarrow x = k\pi + \frac{\pi}{2}$, $k \in \mathbb{Z}$
- $\sigma\upsilon\nu x = 1 \Rightarrow x = 2k\pi$, $k \in \mathbb{Z}$
- $\sigma\upsilon\nu x = -1 \Rightarrow x = 2k\pi + \pi$, $k \in \mathbb{Z}$

1° Να λυθεί η εξίσωση $\eta\mu x = -\frac{\sqrt{3}}{2}$

ΛΥΣΗ

$$\eta\mu x = -\frac{\sqrt{3}}{2} \Rightarrow$$

$$\eta\mu x = -\eta\mu \frac{\pi}{3} \Rightarrow$$

$$\eta\mu x = \eta\mu \left(-\frac{\pi}{3}\right) \Rightarrow$$

$$x = 2k\pi - \frac{\pi}{3} \text{ ή } x = 2k\pi + \pi + \frac{\pi}{3} \Rightarrow$$

$$x = 2k\pi - \frac{\pi}{3} \text{ ή } x = 2k\pi + \frac{4\pi}{3}, k \in \mathbb{Z}.$$

$$-\eta\mu a = \eta\mu(-a)$$

$$-\sigma\upsilon\nu a = \sigma\upsilon\nu(\pi - a)$$

$$-\epsilon\phi a = \epsilon\phi(-a)$$

$$-\sigma\phi a = \sigma\phi(-a)$$

2° Να λυθεί η εξίσωση $\eta\mu \left(2x + \frac{\pi}{4}\right) = \frac{1}{2}$

ΛΥΣΗ

$$\eta\mu \left(2x + \frac{\pi}{4}\right) = \frac{1}{2} \Rightarrow$$

$$\eta\mu \left(2x + \frac{\pi}{4}\right) = \eta\mu \frac{\pi}{6} \Rightarrow$$

$$2x + \frac{\pi}{4} = 2k\pi + \frac{\pi}{6} \text{ ή } 2x + \frac{\pi}{4} = 2k\pi + \pi - \frac{\pi}{6} \Rightarrow$$

$$\begin{aligned}
 2x &= 2k\pi + \frac{\pi}{6} - \frac{\pi}{4} \quad \text{ή} \quad 2x = 2k\pi + \frac{5\pi}{6} - \frac{\pi}{4} \Rightarrow \\
 2x &= 2k\pi - \frac{\pi}{12} \quad \text{ή} \quad 2x = 2k\pi + \frac{7\pi}{12} \Rightarrow \\
 x &= k\pi - \frac{\pi}{24} \quad \text{ή} \quad x = k\pi + \frac{7\pi}{24}, \quad k \in \mathbb{Z}.
 \end{aligned}$$

1^ο Να λυθεί η εξίσωση $\sin x = \frac{\sqrt{2}}{2}$

ΛΥΣΗ

$$\begin{aligned}
 \sin x &= \frac{\sqrt{2}}{2} \Rightarrow \\
 \sin x &= \sin \frac{\pi}{4} \Rightarrow \\
 x &= 2k\pi + \frac{\pi}{4} \quad \text{ή} \quad x = 2k\pi - \frac{\pi}{4}, \quad k \in \mathbb{Z}.
 \end{aligned}$$

2^ο Να λυθεί η εξίσωση $\sin 2x = -\frac{\sqrt{3}}{2}$

ΛΥΣΗ

$$\begin{aligned}
 \sin 2x &= -\frac{\sqrt{3}}{2} \Rightarrow \\
 \sin 2x &= -\sin \frac{\pi}{6} \Rightarrow \\
 \sin 2x &= \sin \left(\pi - \frac{\pi}{6} \right) \Rightarrow \\
 \sin 2x &= \sin \frac{5\pi}{6} \Rightarrow \\
 2x &= 2k\pi + \frac{5\pi}{6} \quad \text{ή} \quad 2x = 2k\pi - \frac{5\pi}{6} \Rightarrow \\
 x &= k\pi + \frac{5\pi}{12} \quad \text{ή} \quad x = k\pi - \frac{5\pi}{12}, \quad k \in \mathbb{Z}.
 \end{aligned}$$

1^ο Να λυθεί η εξίσωση $\cos x = -1$

ΛΥΣΗ

$$\begin{aligned}
 \cos x &= -1 \Rightarrow \\
 \cos x &= -\cos \frac{\pi}{4} \Rightarrow \\
 \cos x &= \cos \left(-\frac{\pi}{4} \right) \Rightarrow \\
 x &= k\pi - \frac{\pi}{4}, \quad k \in \mathbb{Z}.
 \end{aligned}$$