

## Βασικές μηχανοθεωρικές ταυτίσεις

$$1) \quad n\mu^2\omega + 6\omega^2\omega = 1$$

$$2) \quad \xi\varphi\omega = \frac{n\mu\omega}{6\omega\omega}, \quad 6\varphi\omega = \frac{6\omega\omega}{n\mu\omega}$$

$$3) \quad \xi\varphi\omega \cdot 6\varphi\omega = 1$$

$$4) \quad 6\nu\nu^2\omega = \frac{1}{1 + \xi\varphi^2\omega}$$

Αγκ:

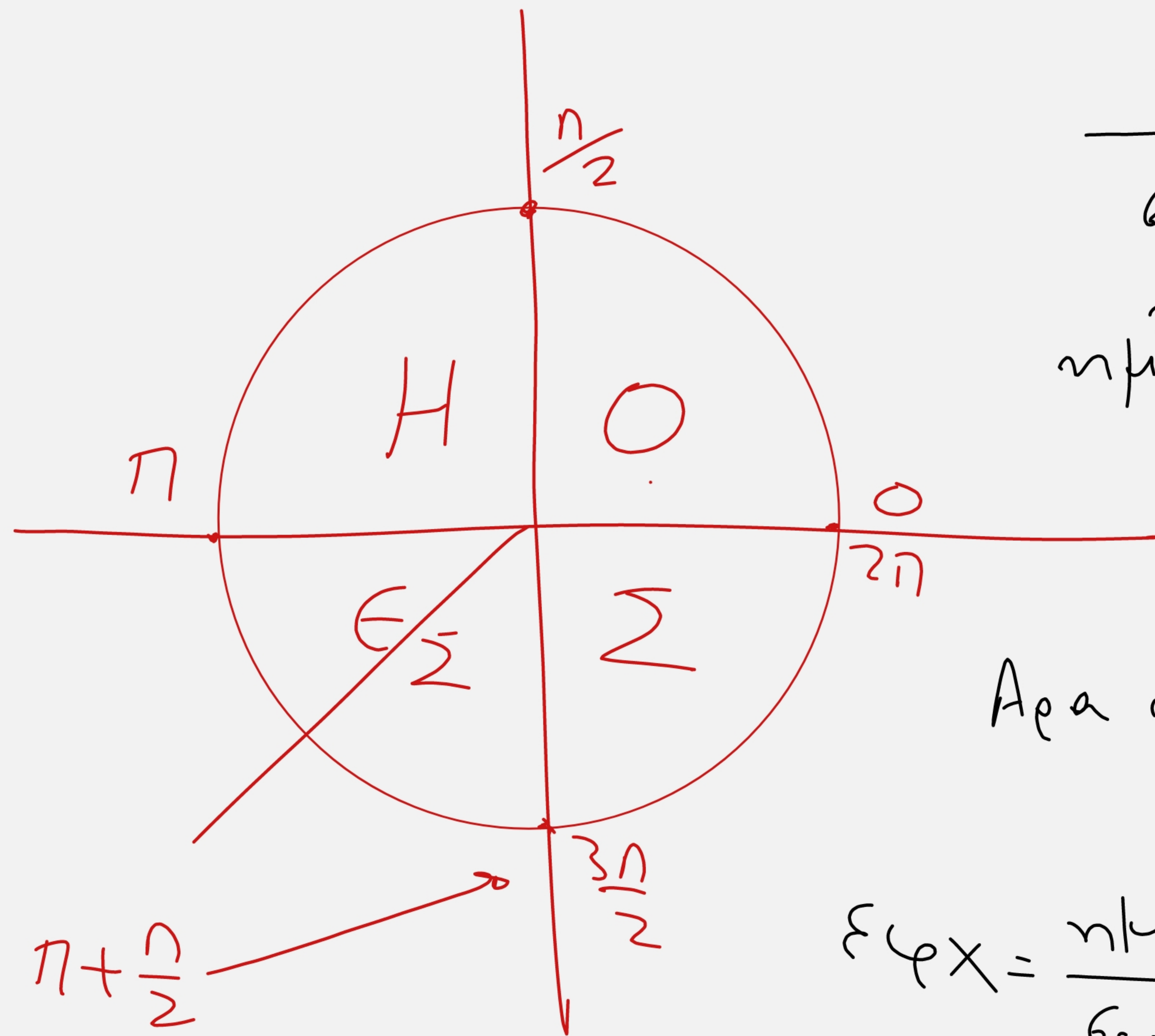
$$\xi\varphi\omega = \frac{3}{4} \Rightarrow 6\varphi\omega = \frac{4}{3}$$

$$n\mu\omega = 1 \Rightarrow 6\omega\omega = 1$$

$$6\nu\nu^2\omega = 1 - n\mu^2\omega = 1 - 1 = 0$$

$$6\omega\omega = 0$$

$$n\mu^2\omega + 6\omega^2\omega = 1 \Rightarrow \frac{n\mu^2\omega}{6\omega^2\omega} + \frac{6\omega^2\omega}{6\omega^2\omega} = \frac{1}{6\omega^2\omega} \Rightarrow \frac{\xi\varphi^2\omega + 1}{1} = \frac{1}{6\omega^2\omega}$$



$$\frac{\omega_{u.2} / \Sigma \varepsilon \lambda 03}{}$$

$$6\omega x = -\frac{2}{3}, \quad n < x < \frac{3n}{2}$$

$$\begin{aligned} m\mu^2 x &= 1 - 6\omega^2 x = 1 - \left(-\frac{2}{3}\right)^2 = 1 - \left(+\frac{4}{9}\right) = \\ &= \frac{1}{1} - \frac{4}{9} = \frac{9}{9} - \frac{4}{9} = \frac{5}{9} \end{aligned}$$

$$\text{Ara } m\mu^2 x = \frac{5}{9} \Rightarrow m\mu x = \pm \frac{\sqrt{5}}{3} \left\{ \begin{array}{l} m\mu x = -\frac{\sqrt{5}}{3} \\ m\mu x = \frac{\sqrt{5}}{3} \end{array} \right.$$

$$\begin{aligned} \varepsilon \varphi x &= \frac{m\mu x}{6\omega x} = \frac{\frac{\sqrt{5}}{3}}{-\frac{2}{3}} = \frac{\sqrt{5} \cdot 3}{3 \cdot 2} = \frac{\sqrt{5}}{2} \quad \text{or } \frac{-\sqrt{5}}{2} \\ &\quad \text{for } n < x < \frac{3n}{2} \end{aligned} \quad \left/ \quad \begin{array}{l} 6\varphi x = \frac{2}{\sqrt{5}} \\ 6\varphi x = -\frac{2}{\sqrt{5}} \end{array} \right.$$

Διαγώνισμα Άλγεβρας: Τετάρτη 13-11-2024

Υ/λση: Α) Τριγωνομετρία: §3.2 Βαθμίες τριγωνομετρικές ταυτότητες

§3.3 αναγωγή στο 1ο τεταρτημόριο.

Β) Από τη μελέτη συνάρτησης: μόνο μέγιστο του

δευτεροβάθμιου τριωνύμου:  $f(x) = ax^2 + bx + c$

και μεζωζονίσεις

Γ) Όχι θεωρία, όχι ορατό, όχι Σ-Α.

Δ) Μόνο ασκήσεις

$$464.6 / \Sigma. 63$$

$$\alpha) \text{ μη } x=0, \text{ βν } x=0$$

Αν υπάρχει ρωτά x

§2 ξηρερε

$$\text{μη } x + 6\text{νν}^2 x = 1 \quad (=)$$

$$0^2 + 0^2 = 1 \quad \text{220ne}$$

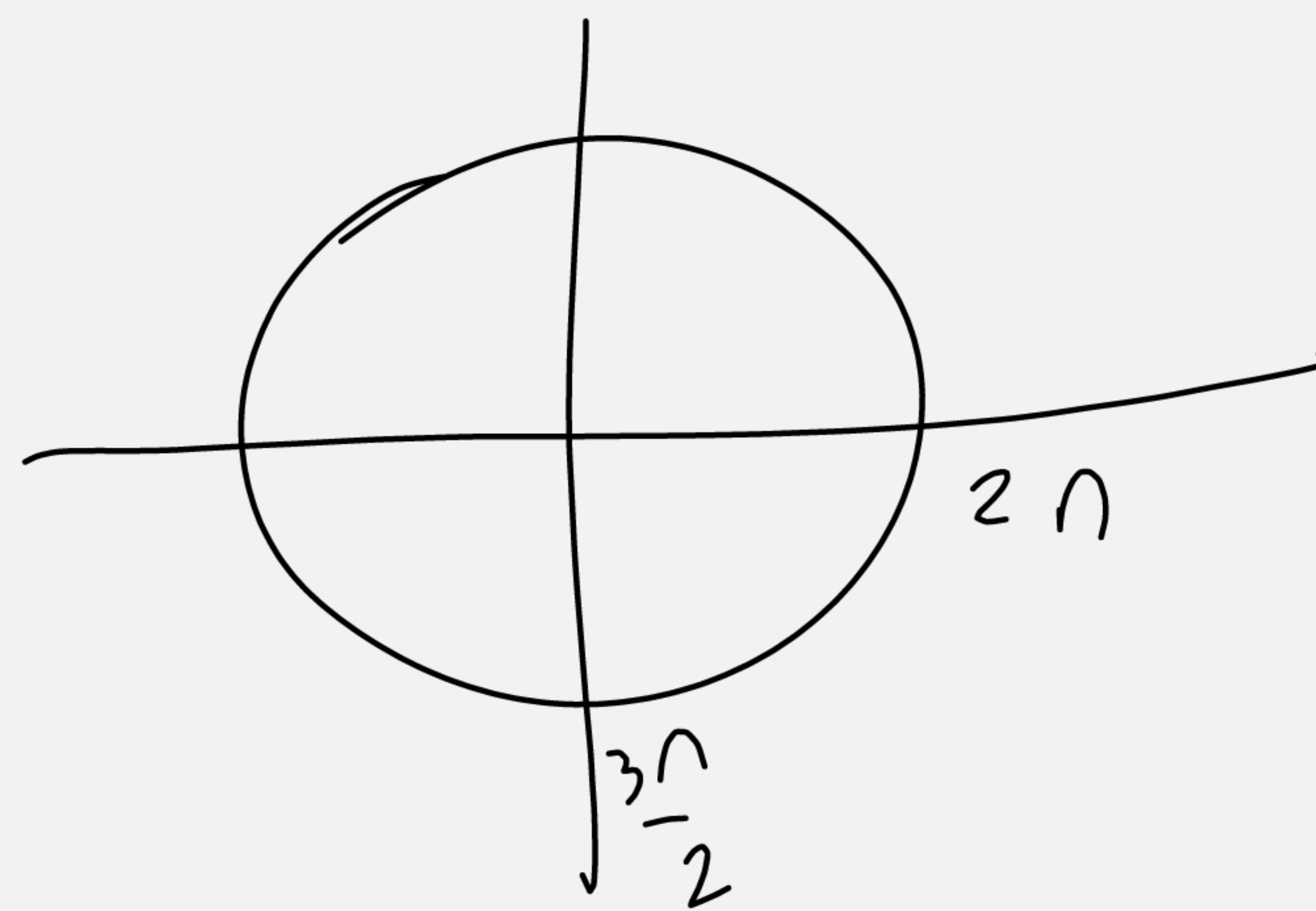
aku.3 /  $\Sigma \epsilon \lambda 63$

$$\epsilon_{\phi X} = -\frac{\sqrt{3}}{3}, \quad \frac{3\pi}{2} < X < 2\pi$$

$$\sigma_{\phi X} = -\frac{3}{\sqrt{3}} = \frac{-\sqrt{3}}{\sqrt{3} \cdot \sqrt{3}} = \frac{-\sqrt{3}}{3} = -\sqrt{3}$$

$$\sigma_{uvw}^2 = \frac{1}{\epsilon_{\phi X}^2 + 1} = \frac{1}{\left(-\frac{\sqrt{3}}{3}\right)^2 + 1} = \frac{1}{\frac{3}{9} + 1} = \frac{1}{\frac{1}{3} + 1} = \frac{1}{\frac{1}{3} + \frac{3}{3}} = \frac{1}{\frac{4}{3}} = \frac{3}{4}$$

$$\left. \begin{aligned} &= \frac{3}{4} \quad \text{Apakah } \sigma_{uvw}^2 = \frac{3}{4} \Rightarrow \sigma_{uvw} = \pm \sqrt{\frac{3}{4}} \\ &\quad \frac{3\pi}{2} < w < 2\pi \end{aligned} \right\} \sigma_{uvw} = \frac{\sqrt{3}}{2}$$



α64.10 / Σελ 63

ii)  $6\omega^4 a - \eta\mu^4 a = 26\omega^2 a - 1$

$$\sigma\upsilon\nu^4 a - \eta\mu^4 a = (\sigma\upsilon\nu^2 a - \eta\mu^2 a) \underbrace{(\sigma\omega^2 a + \eta\mu^2 a)}_{1} =$$

$$= \sigma\upsilon\nu^2 a - \eta\mu^2 a = \sigma\upsilon\nu^2 a - \left(1 - \sigma\upsilon\nu^2 a\right) = \sigma\upsilon\nu^2 a - 1 + \sigma\upsilon\nu^2 a =$$

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$$= 2\sigma\upsilon\nu^2 a - 1$$

Σελ. 63 α6k. 1, 4, 5, 6, 10;

Διάβαση / Σελ 62 εφαρμογή 2