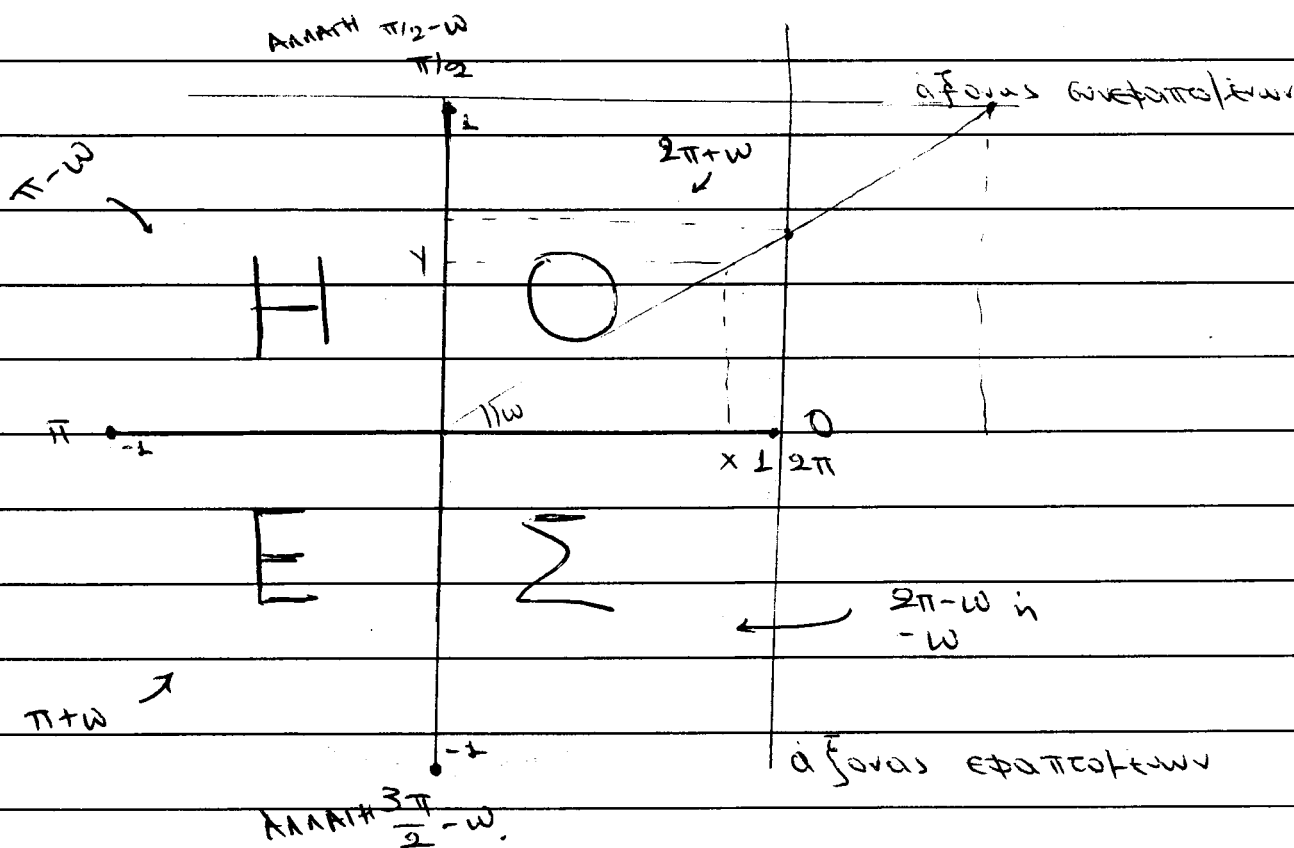


$$x = \cos \omega$$

$$y = \sin \omega$$

$$-1 \leq \frac{y}{x} \leq 1$$

$$\alpha = \frac{a}{\pi} = \frac{h}{180^\circ}$$



$$\eta \omega = \frac{\text{απέναντι καθ}}{\text{υποκείμενο}}$$

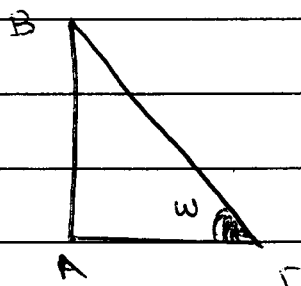
$$\eta \omega = \frac{y}{p}, \quad \theta \omega = \frac{x}{p}$$

$$\theta \omega = \frac{\text{προςκειτ. καθ}}{\text{υποκείμενο}}$$

$$\epsilon \phi \omega = \frac{y}{x}, \quad \theta \phi \omega = \frac{x}{y}$$

$$\epsilon \phi \omega = \frac{\text{απέναντι καθ}}{\text{προςκειτ. καθ}}$$

$$\theta \phi \omega = \frac{\text{προςκειτ. καθ}}{\text{απέναντι καθ}}$$



$$p = \sqrt{x^2 + y^2}$$

## BASICES TRIGONOMETRIKES TANTO THTE

$$[1] \quad \eta^2 \omega + \sigma \omega^2 = 1 \Leftrightarrow \begin{cases} \eta^2 \omega = 1 - \sigma \omega^2 = (1 - \sigma \omega)(1 + \sigma \omega) \\ \sigma \omega^2 = 1 - \eta^2 \omega = (1 - \eta \omega)(1 + \eta \omega) \end{cases}$$

$$[2] \quad \epsilon \phi \omega = \frac{\eta \omega}{\sigma \omega \omega} \quad \text{και} \quad \sigma \phi \omega = \frac{\sigma \omega \omega}{\eta \omega}$$

$$[3] \quad \epsilon \phi \omega \cdot \sigma \phi \omega = 1 \Leftrightarrow \epsilon \phi \omega = \frac{1}{\sigma \phi \omega} \quad \text{η} \quad \sigma \phi \omega = \frac{1}{\epsilon \phi \omega}$$

$$[4] \quad \sigma \omega^2 \omega = \frac{1}{1 + \epsilon \phi^2 \omega} \quad \text{και} \quad \eta \omega^2 \omega = \frac{\epsilon \phi^2 \omega}{1 + \epsilon \phi^2 \omega}$$

## ΤΥΠΟΙ ΑΘΡΩΣΜΑΤΟΣ

$$1. \quad \sigma \omega (a - b) = \sigma \omega a \cdot \sigma \omega b + \eta \omega a \eta \omega b$$

$$2. \quad \sigma \omega (a + b) = \sigma \omega a \cdot \sigma \omega b - \eta \omega a \eta \omega b$$

$$3. \quad \eta \omega (a + b) = \eta \omega a \sigma \omega b + \sigma \omega a \eta \omega b$$

$$4. \quad \eta \omega (a - b) = \eta \omega a \sigma \omega b - \sigma \omega a \eta \omega b$$

$$5. \quad \epsilon \phi (a + b) = \frac{\epsilon \phi a + \epsilon \phi b}{1 - \epsilon \phi a \epsilon \phi b}$$

$$6. \quad \epsilon \phi (a - b) = \frac{\epsilon \phi a - \epsilon \phi b}{1 + \epsilon \phi a \epsilon \phi b}$$

$$7. \quad \sigma \phi (a + b) = \frac{\sigma \phi a \sigma \phi b - 1}{\sigma \phi b + \sigma \phi a}$$

$$8. \quad \sigma \phi (a - b) = \frac{\sigma \phi a \sigma \phi b + 1}{\sigma \phi b - \sigma \phi a}$$

Τύποι 2α

$$|1| \quad \eta \hbar^2 2a = 2\hbar^2 a \sin \nu a$$

$$|2| \quad \sin \nu 2a = \sin \nu^2 a - \eta \hbar^2 a$$

$$\eta \hbar^2 a = \frac{1 - \sin \nu 2a}{2}$$

$$\frac{2 \sin \nu^2 a - 1}{\eta \hbar^2 a}$$

$$\frac{1 \sin \nu^2 a - 1}{2} = \frac{1 + \sin \nu 2a}{2}$$

$$1 - 2 \eta \hbar^2 a$$

$$\frac{1 - \sin \nu 2a}{1 + \sin \nu 2a}$$

$$|3| \quad \epsilon \phi 2a = \frac{2 \epsilon \phi a}{1 - \epsilon \phi^2 a}$$

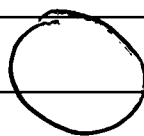
ΑΛΛΑΓΗ

$\pi/2 - w$

$\pi - w$

$2\pi + w$

H



$\pi$

$0$   
 $2\pi$

E

$\Sigma$

$2\pi - w$

$-w$

$\pi + w$

$3\pi/2 - w$   
ΑΛΛΑΓΗ

## ΓΙΑ ΕΙΣΟΔΕΙΣ

$$\text{[1]} \quad \sin x = \sin \theta \Leftrightarrow \begin{cases} x = 2k\pi + \theta \\ \text{ή} \\ x = 2k\pi + (\pi - \theta) \end{cases} \quad k \in \mathbb{Z}$$

$$\text{[2]} \quad \cos x = \cos \theta \Leftrightarrow \begin{cases} x = 2k\pi + \theta \\ \text{ή} \\ x = 2k\pi - \theta \end{cases} \quad k \in \mathbb{Z}$$

$$\text{[3]} \quad \sin x = 0 \Leftrightarrow x = k\pi \quad k \in \mathbb{Z}$$

$$\text{[4]} \quad \cos x = 0 \Leftrightarrow x = k\pi + \frac{\pi}{2} \quad k \in \mathbb{Z}$$

## SPECIAL

$$\sin x = 0 \Leftrightarrow x = k\pi$$

$$\cos x = 0 \Leftrightarrow x = k\pi + \frac{\pi}{2}$$

$$\sin x = 1 \Leftrightarrow x = 2k\pi + \frac{\pi}{2}$$

$$\cos x = 1 \Leftrightarrow x = 2k\pi$$

$$\sin x = -1 \Leftrightarrow x = 2k\pi - \frac{\pi}{2}$$

$$\cos x = -1 \Leftrightarrow x = 2k\pi + \pi$$

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