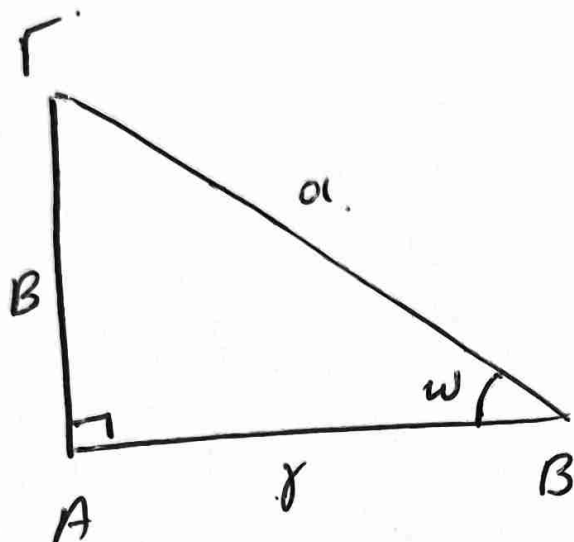


Τριγωνμετρία

1.



$$\eta\rho\omega^1 = \frac{\text{απ.κath.}}{\text{υποταν.}} = \frac{B}{\alpha}$$

$$\sigma\omega\omega^1 = \frac{\text{προσκ. καθ.}}{\text{υποταν.}} = \frac{\gamma}{\alpha}$$

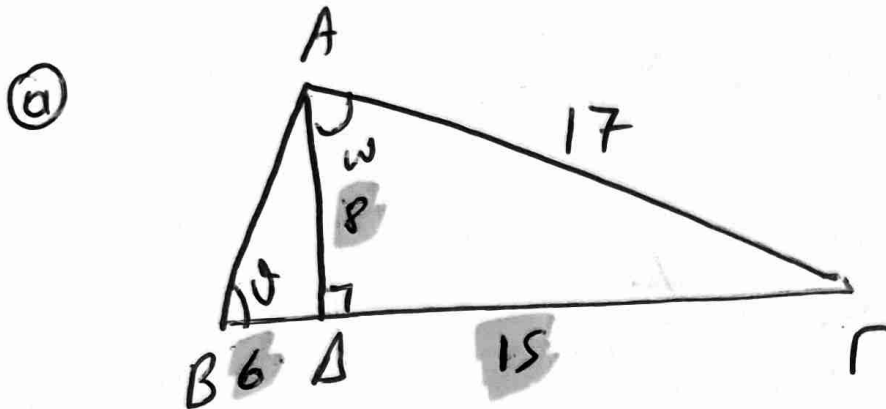
$$\epsilon\varphi\omega^1 = \frac{\text{απαν. καθ.}}{\text{προσκ. καθ.}} = \frac{B}{\gamma}$$

$$\sigma\varphi\omega^1 = \frac{\text{προσκ. καθ.}}{\text{απαν. καθ.}} = \frac{\gamma}{B}$$

Ενότητα 9

$$\eta \rho \hat{\omega} = \frac{15}{17}$$

$$\varepsilon \psi \hat{\theta} = \frac{4}{3},$$



$$\eta \rho \hat{\omega} = \frac{15}{17}$$

$$\frac{\Delta \Gamma}{A \Gamma} = \frac{15}{17} \Rightarrow \frac{\Delta \Gamma}{17} = \frac{15}{17} \Rightarrow \underline{\underline{\Delta \Gamma = 15}}$$

$$A \Delta^2 + 15^2 = 17^2$$

$$A \Delta^2 = 289 - 225 = 64$$

$$A \Delta = 8,$$

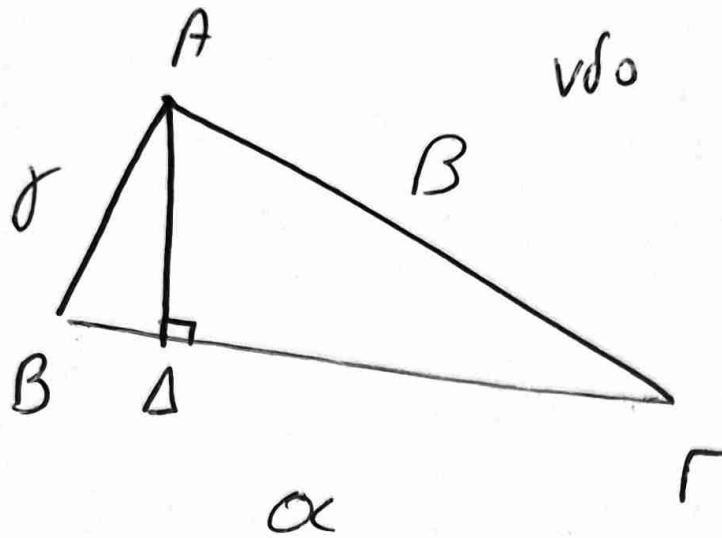
$$\varepsilon \psi \hat{\theta} = \frac{A \Delta}{B \Delta}$$

$$\Leftrightarrow \frac{4}{3} = \frac{8}{B \Delta}$$

$$4 B \Delta = 24$$

$$\underline{\underline{B \Delta = 6}} \Rightarrow B \Gamma = 21,$$

6.

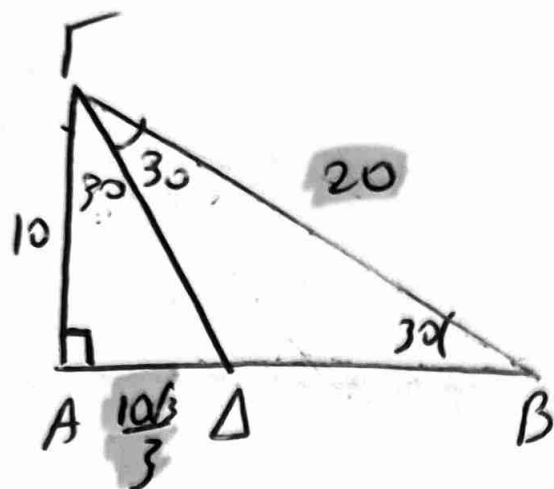


vd0 $\alpha = \beta \cdot \sin \Gamma + \gamma \sin \beta$

$$\alpha = \cancel{\beta} \cdot \frac{\Delta \Gamma}{\cancel{\beta}} + \cancel{\gamma} \cdot \frac{\cancel{\beta} \Delta}{\cancel{\gamma}}$$

$$\alpha = \Delta \Gamma + \beta \Delta \quad \checkmark$$

19.



$$\sin 30 = \frac{10}{BR}$$

$$\frac{1}{2} = \frac{10}{BR} \quad \underline{\underline{BR = 20}}$$

$$\cos 30 = \frac{10}{r_D}$$

$$\frac{\sqrt{3}}{2} = \frac{10}{r_D}$$

$$r_D = \frac{20}{\sqrt{3}} = \frac{20\sqrt{3}}{3}$$

$$\sin 30 = \frac{AD}{10}$$

$$\frac{\sqrt{3}}{2} = \frac{AD}{10} \quad \Rightarrow \quad AD = \frac{10\sqrt{3}}{2}$$

$$10^2 + x^2 = 20^2$$

$$x^2 = 400 - 100$$

$$x^2 = 300$$

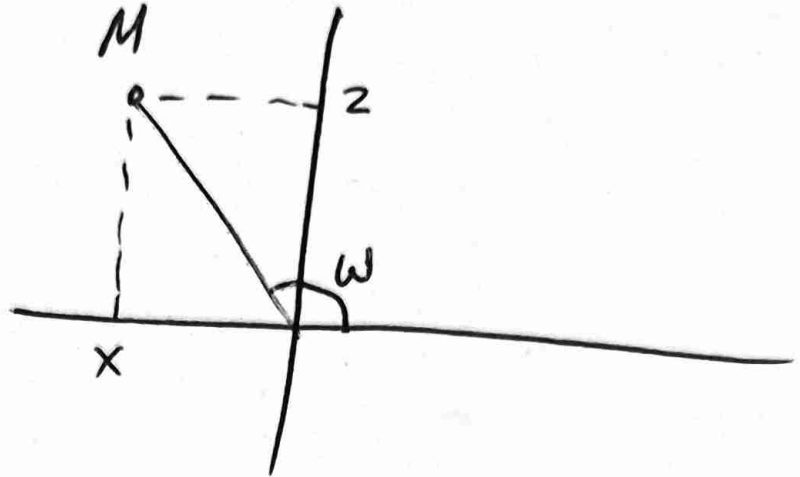
$$x = \sqrt{300} = 10\sqrt{3}$$

$$\Delta B = 10\sqrt{3} - \frac{10\sqrt{3}}{3}$$

$$\Delta B = \frac{20\sqrt{3}}{3}$$

8.

$$\varepsilon\varphi\omega = -\frac{4}{3}$$



$$\eta\rho\omega = \frac{y}{\rho} = \frac{2}{\rho} = \frac{2}{\frac{5}{2}} = \frac{4}{5} \quad \varepsilon\varphi\omega = \frac{y}{x}$$

$$\sigma\omega\omega = \frac{x}{\rho} = \frac{-\frac{3}{2}}{\frac{5}{2}} = -\frac{3}{5} \quad -\frac{4}{3} = \frac{2}{x}$$

$$-4x = 6$$

$$x = -\frac{6}{4}$$

$$x = -\frac{3}{2}$$

$$\eta\rho\omega = \frac{4}{5}$$

$$\sigma\omega\omega = -\frac{3}{5}$$

$$\rho^2 = x^2 + y^2$$

$$\rho^2 = \frac{9}{4} + 4 = \frac{9}{4} + \frac{16}{4} = \frac{25}{4}$$

$$\rho = \frac{5}{2}$$

Μια γωνία τη μετράμε είτε σε

rad είτε σε μοίρες.

$$\frac{\alpha}{\pi} = \frac{\mu}{180}$$

Έστω $120^\circ = \mu$

$$\frac{\alpha}{\pi} = \frac{120}{180}$$

$$120^\circ \rightarrow \frac{2\pi}{3}$$

$$\frac{\alpha}{\pi} = \frac{2}{3}$$

$$\alpha = \frac{2\pi}{3}$$

Έστω $\alpha = \frac{3\pi}{4}$

$$\frac{\frac{3\pi}{4}}{\pi} = \frac{\mu}{180}$$

$$\Rightarrow \frac{3}{4} = \frac{\mu}{180}$$

$$\mu = \frac{3 \cdot 180}{4} = \underline{\underline{135}}$$

$$15. \textcircled{8} \Delta = \frac{8 \cdot \eta \mu^3 30 - 2 \sigma w^2 45 + 3 \omega^2 30}{4 \eta \mu^2 30 - 2 \sigma w 60 + \epsilon \omega 45}$$

$$\Delta = \frac{8 \cdot \frac{1}{2} - 2 \cdot \left(\frac{\sqrt{2}}{2}\right)^2 + 3 \cdot \left(\frac{\sqrt{3}}{3}\right)^2}{4 \cdot \left(\frac{1}{2}\right)^2 - 2 \cdot \frac{1}{2} + 1}$$

$$\Delta = \frac{4 - 2 \cdot \frac{2}{4} + 3 \cdot \frac{3}{9}}{4 \cdot \frac{1}{4} - 1 + 1}$$

$$\Delta = \frac{4 - 1 + 1}{1} = 4.$$

$$12. \textcircled{r} \frac{n}{16}$$

$$\frac{a}{n} = \frac{P}{180}$$

$$\frac{\cancel{n}/16}{\cancel{n}} = \frac{P}{180}$$

$$\frac{1}{16} = \frac{P}{180}$$

$$P = \frac{180}{16} = \frac{90}{8} = \frac{45}{2}$$

11.

$$\mu = 780$$

$$\frac{a}{n} = \frac{\mu}{180}$$

$$\Leftrightarrow \frac{a}{n} = \frac{780}{180}$$

$$a = \frac{780}{18} = \frac{390}{9} = \frac{130}{3}$$

$$a = \frac{130}{3}$$

$$\mu = -1125$$

$$\frac{a}{n} = \frac{-1125}{180} = \frac{-225}{36} = \frac{-75}{12} = \frac{-25}{4}$$

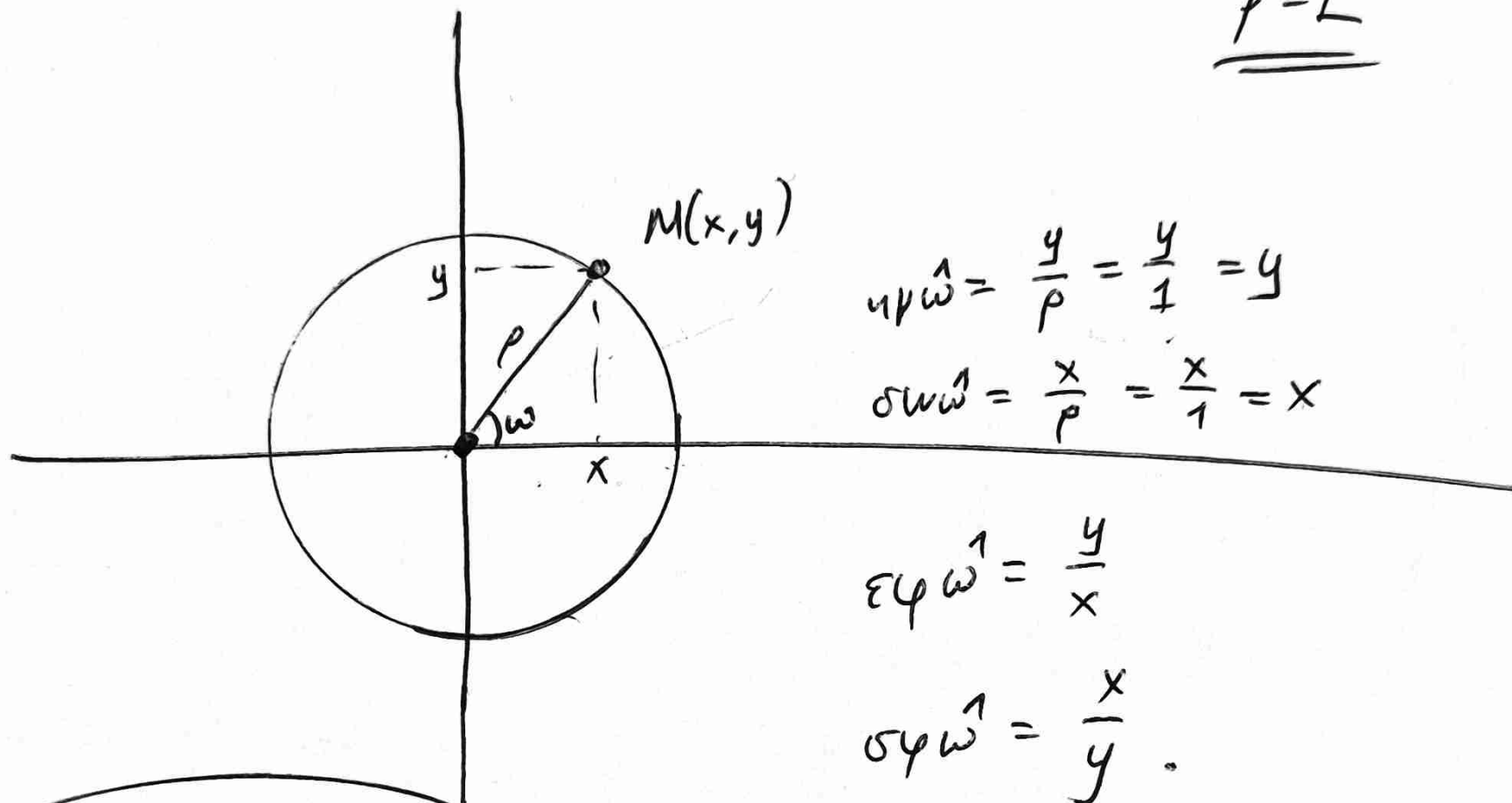
$$\frac{a}{n} = \frac{-25}{4}$$

$$4a = -25n$$

$$a = -\frac{25n}{4}$$

Τριγωνομετρικός κύκλος

$$\underline{\underline{r=L}}$$



$$\eta\psi\omega^1 = \frac{y}{r} = \frac{y}{1} = y$$

$$\sigma\psi\omega^1 = \frac{x}{r} = \frac{x}{1} = x$$

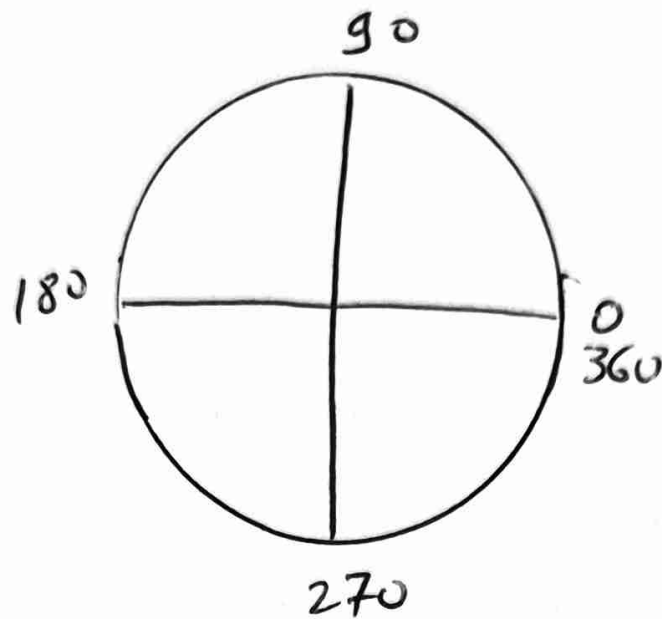
$$\varepsilon\psi\omega^1 = \frac{y}{x}$$

$$\sigma\psi\omega^1 = \frac{x}{y}$$

$$r^2 = x^2 + y^2$$

$\frac{\pi}{6}$ $\frac{\pi}{4}$ $\frac{\pi}{3}$ $\frac{\pi}{2}$ π $\frac{3\pi}{2}$ 2π

ω	0	30	45	60	90	180	270	360
$\cos \omega$	0	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$	1	0	-1	0
$\sin \omega$	1	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0	-1	0	1
$\cos 2\omega$	0	$\frac{\sqrt{3}}{3}$	1	$\sqrt{3}$	-	0	-	0
$\sin 2\omega$	-	$\sqrt{3}$	1	$\frac{\sqrt{3}}{3}$	0	-	0	-

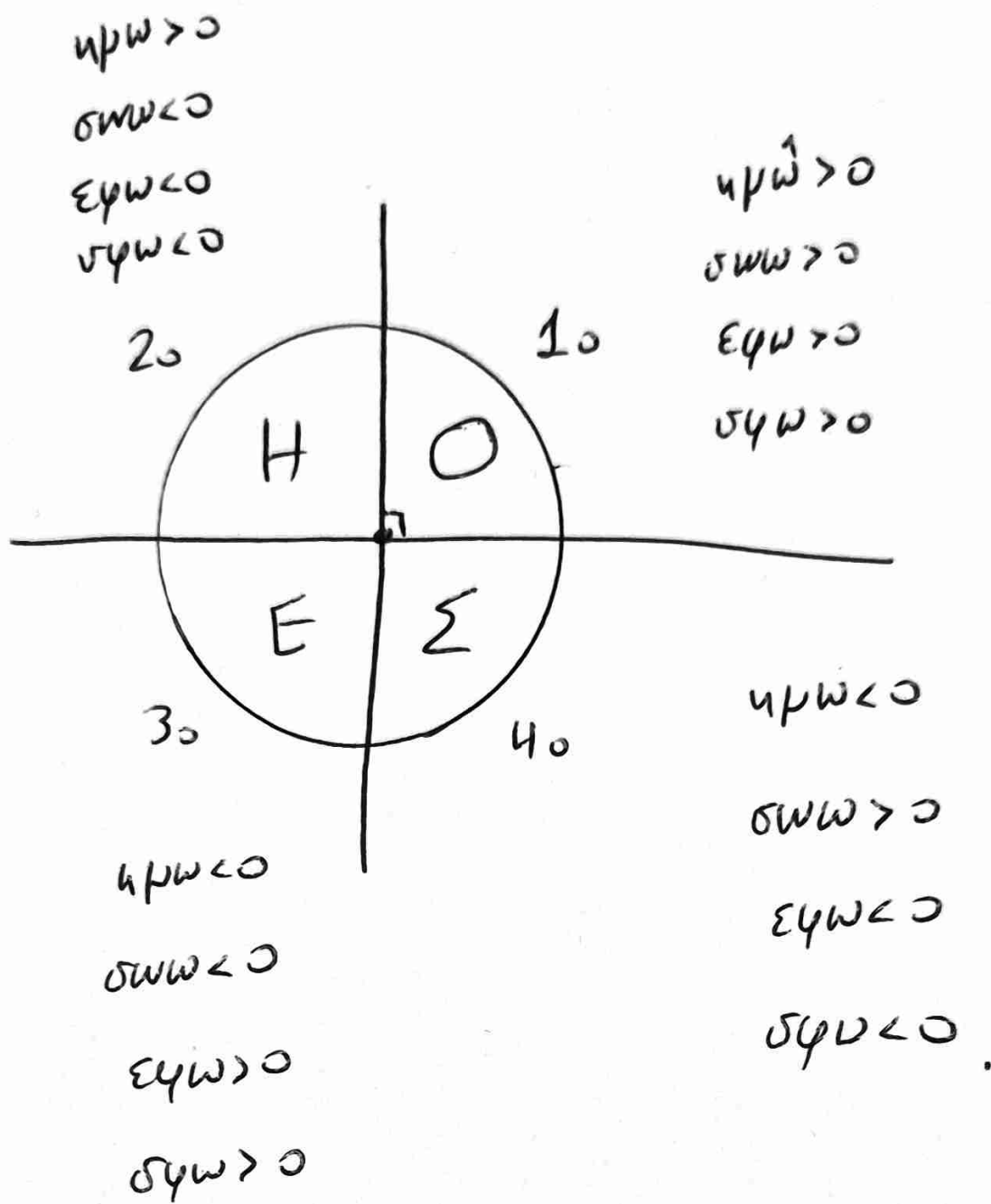


$$\eta p(k \cdot 360 + \omega) = \eta p \omega$$

$$\sigma \omega(k \cdot 360 + \omega) = \sigma \omega \omega$$

$$\varepsilon \varphi(k \cdot 360 + \omega) = \varepsilon \varphi \omega$$

$$\sigma \varphi(k \cdot 360 + \omega) = \sigma \varphi \omega$$



Προσχημα γινεται.

Άσκηση

Βρίτ την παράσταση

$$A = \frac{\sigma\omega 1140 \cdot \eta\mu 2550}{\eta\mu 1350}.$$

$$\sigma\omega 1140 = \sigma\omega (3 \cdot 360 + 60) = \sigma\omega 60 = \frac{1}{2}$$

$$\eta\mu 2550 = \eta\mu (7 \cdot 360 + 30) = \eta\mu 30 = \frac{1}{2}$$

$$\eta\mu 1350 = \eta\mu (3 \cdot 360 + 270) = \eta\mu 270 = -1.$$

$$A = \frac{\frac{1}{2} \cdot \frac{1}{2}}{-1} = -\frac{1}{4}.$$