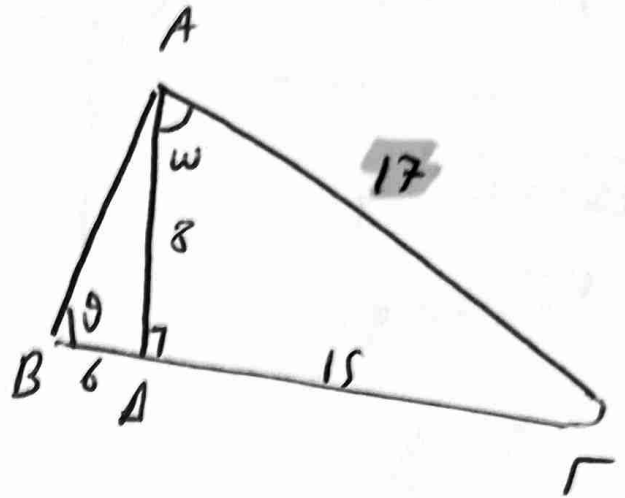


# ΕΥΟΜΕΤΑ 9

$$3. \quad \eta \mu \hat{\omega} = \frac{15}{17}$$

$$\varepsilon \varphi \theta = \frac{4}{3}$$



$$\eta \mu \hat{\omega} = \frac{15}{17} \quad (\Rightarrow) \quad \frac{AD}{AC} = \frac{15}{17}$$

$$\Rightarrow \underline{\underline{AD = 15}}$$

$$15^2 + AD^2 = 17^2$$

$$225 + AD^2 = 289$$

$$AD^2 = 289 - 225$$

$$AD^2 = 8$$

$$AD = 8$$

$$\varepsilon \varphi \theta = \frac{4}{3}$$

$$\frac{8}{BD} = \frac{4}{3}$$

$$24 = 4BD$$

$$\underline{\underline{BD = 6}}$$

$$BC = 6 + 15 = \underline{\underline{21}}$$

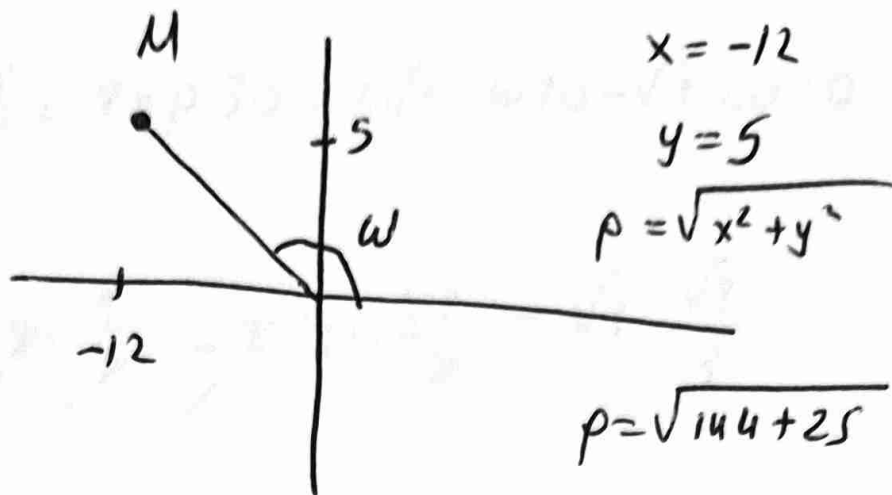
7.

$$\eta \rho \hat{\omega} = \frac{y}{\rho} = \frac{5}{13}$$

$$\sigma \omega \hat{\omega} = \frac{x}{\rho} = -\frac{12}{13}$$

$$\varepsilon \varphi \hat{\omega} = \frac{y}{x} = \frac{5}{-12}$$

$$\sigma \varphi \hat{\omega} = \frac{x}{y} = \frac{-12}{5}$$

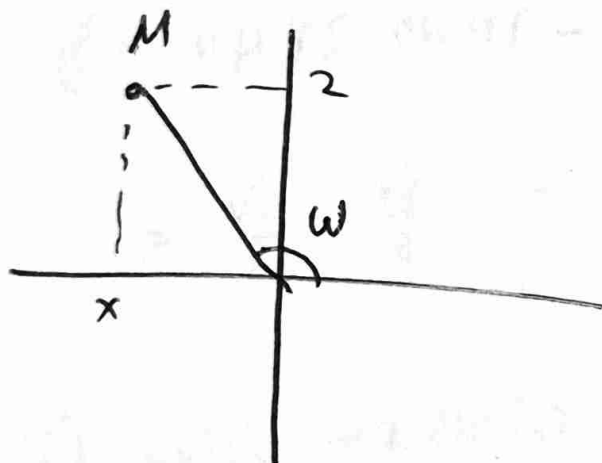


$$\rho = \sqrt{144 + 25}$$

$$\rho = \sqrt{169}$$

$$\underline{\underline{\rho = 13}}$$

8.



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

$$\rho = \sqrt{\frac{9}{4} + 4} = \frac{5}{2}$$

$$\eta \rho \hat{\omega} = \frac{y}{\rho} = \frac{2}{\frac{5}{2}} = \frac{4}{5}$$

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

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

$$\frac{y}{x} = -\frac{4}{3}$$

$$\frac{2}{x} = -\frac{4}{3}$$

$$6 = -4x$$

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

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

15. (a)  $A = 2\cos 30 - 2\sqrt{3} \sin 30 - \sqrt{3} \cos 30$

$$A = \cancel{2} \cdot \frac{1}{\cancel{2}} - \cancel{2}\sqrt{3} \cdot \frac{\sqrt{3}}{2} - \sqrt{3} \frac{\sqrt{3}}{2}$$

$$A = 1 - 3 - \frac{3}{2}$$

$$A = \cancel{1} - 3 - \cancel{1}$$

$$\underline{\underline{A = -3}}$$

(b)  $\cos 45 \cdot \sin 45 - \cos 45 =$

$$= \frac{\sqrt{2}}{2} \cdot \frac{\sqrt{2}}{2} - 1 = \frac{2}{4} - 1 = \frac{1}{2} - 1 = \underline{\underline{-\frac{1}{2}}}$$

(c)  $\cos^2 60 - 2 \sin 60 - \cos^2 60 =$

$$= \left(\frac{\sqrt{3}}{2}\right)^2 - \cancel{2} \frac{1}{2} - \sqrt{3}^2 =$$

$$= \frac{3}{4} - 1 - 3 = \frac{3}{4} - 4 = \frac{3}{4} - \frac{16}{4} = \underline{\underline{-\frac{13}{4}}}$$

⑧

$$\frac{8np30 - 2\omega^2 45 + 3\epsilon\psi^2 30}{4np^2 30 - 2\omega 60 + \epsilon\psi 45} =$$

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

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

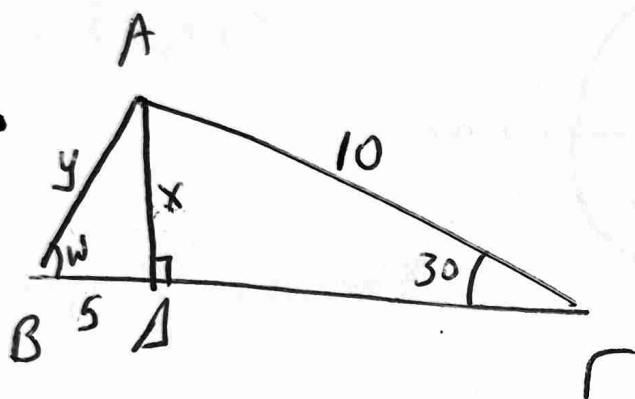
$$= \frac{4 - 1 + \frac{9}{9}}{1} = \frac{4 - 1 + 1}{1} = 4.$$

$$17. (B) \quad \sigma \omega^2 \frac{\eta}{4} - \sigma \gamma \frac{\eta}{4} + c \gamma \eta - \sigma \omega \frac{3\eta}{2}$$

$$= \left(\frac{\sqrt{2}}{2}\right)^2 - 1 + 0 - 0$$

$$= \frac{2}{4} - 1 = -\frac{1}{2}$$

18.



$$\sin 30 = \frac{1}{2}$$

$$\frac{x}{10} = \frac{1}{2}$$

$$2x = 10$$

$$\underline{\underline{x = 5}}$$

$$\varepsilon \phi \omega^1 = \frac{5}{5} = 1$$

$$\omega^1 = 4f$$

$$5^2 + 5^2 = y^2$$

$$25 + 25 = y^2$$

$$50 = y^2$$

$$y = \sqrt{50}$$

$$y = \sqrt{2} \sqrt{25}$$

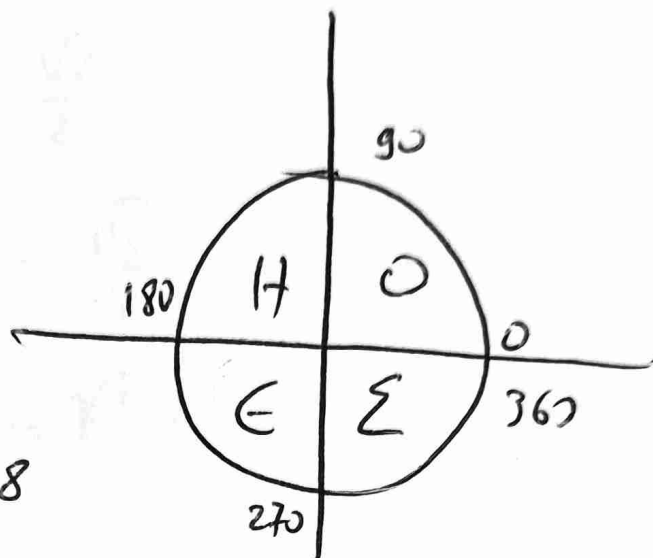
$$\underline{\underline{y = 5\sqrt{2}}}$$

22. (a)  $\eta p 250 < 0$

(b)  $\sigma w 330 > 0$

(c)  $\eta p \frac{13n}{5} = \eta p 468$

$= \eta p (360 + 108) = \eta p 108 > 0$



(20)  $\sigma w \frac{23n}{7} = \sigma w \frac{14n + 9n}{7} =$

$= \sigma w \left( 2\cancel{n} + \frac{9n}{7} \right) = \sigma w \frac{9n}{7} = \sigma w 252 < 0$

20. i)  $390 = 360 + 30$

$$\eta_{\mu 390} = \eta_{\mu (360+30)} = \eta_{\mu 30} = \frac{1}{2}$$

$$\sigma_{W 390} = \sigma_{W 30} = \frac{\sqrt{3}}{2}$$

$$\varepsilon_{\psi 390} = \varepsilon_{\psi 30} = \frac{\sqrt{3}}{3}$$

$$\sigma_{\psi 390} = \sigma_{\psi 30} = \sqrt{3}.$$

ii)  $-1035 = -3 \cdot 360 + 45$

$$\eta_{\mu (-1035)} = \eta_{\mu 45} = \frac{\sqrt{2}}{2}$$

$$\sigma_{W (-1035)} = \sigma_{W 45} = \frac{\sqrt{2}}{2}$$

$$\varepsilon_{\psi (-1035)} = \varepsilon_{\psi 45} = \frac{1}{2}$$

$$\sigma_{\psi (-1035)} = \sigma_{\psi 45} = \frac{1}{2}.$$

$$1. \textcircled{a} \quad \boxed{\eta \rho \dot{\omega} = -\frac{4}{5}}$$

$$\eta \rho^2 \dot{\omega} + \sigma \omega^2 \dot{\omega} = 1$$

$$\left(-\frac{4}{5}\right)^2 + \sigma \omega^2 \dot{\omega} = 1$$

$$\frac{16}{25} + \sigma \omega^2 \dot{\omega} = 1$$

$$\sigma \omega^2 \dot{\omega} = 1 - \frac{16}{25}$$

$$\sigma \omega^2 \dot{\omega} = \frac{25}{25} - \frac{16}{25}$$

$$\sigma \omega^2 \dot{\omega} = \frac{9}{25}$$

$$\boxed{\sigma \omega \dot{\omega} = \frac{3}{5}}$$

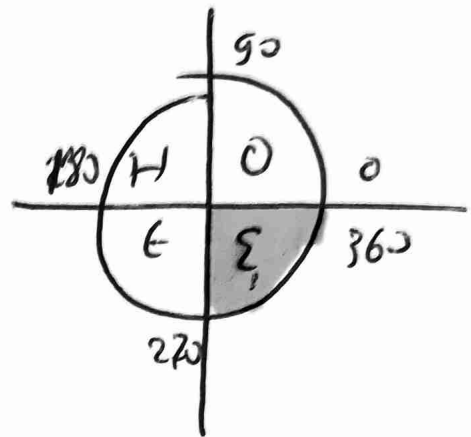
$$\cancel{\sigma \omega \dot{\omega} = -\frac{3}{5}}$$

$$\epsilon \varphi \dot{\omega} = \frac{\eta \rho \dot{\omega}}{\sigma \omega \dot{\omega}} = \frac{-\frac{4}{5}}{\frac{3}{5}} = -\frac{4}{3}$$

$$\boxed{\sigma \varphi \dot{\omega} = -\frac{3}{4}}$$

Ερωτημα 10

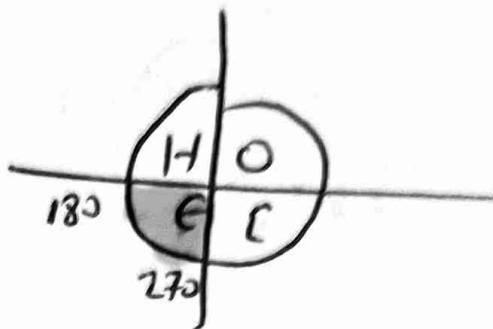
$$\frac{3\pi}{2} < \omega < 2\pi$$



$$\boxed{\epsilon \varphi \dot{\omega} = -\frac{4}{3}}$$

(B)

$$\sigma \omega^1 = -\frac{5}{13}$$



$$\eta p^2 \omega + \sigma \omega^2 \omega = 1$$

$$\eta p^2 \omega + \left(-\frac{5}{13}\right)^2 = 1$$

$$\eta p^2 \omega + \frac{25}{169} = 1$$

$$\eta p^2 \omega = 1 - \frac{25}{169}$$

$$\eta p^2 \omega = \frac{169}{169} - \frac{25}{169}$$

$$\eta p^2 \omega = \frac{144}{169}$$

~~$$\eta p \omega = \frac{12}{13}$$~~

$$\eta p \omega = -\frac{12}{13}$$

$$\varepsilon \psi \omega^1 = \frac{\eta p \omega}{\sigma \omega \omega} = \frac{-\frac{12}{13}}{-\frac{5}{13}} = \frac{12}{5}$$

~~$$\varepsilon \psi \omega^1 = \frac{12}{5}$$~~

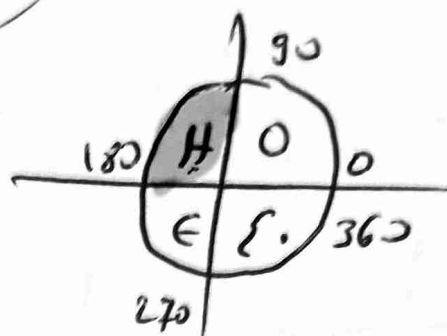
$$\sigma \psi \omega^1 = \frac{5}{12}$$

2.

(a)  $\epsilon \psi x = -\frac{3}{4}$

$$\frac{\eta}{2} < x < \eta$$

$$\delta w^2 \omega = \frac{1}{1 + \epsilon \psi^2 \omega}$$



$$\delta w^2 \omega = \frac{1}{1 + \frac{9}{16}} = \frac{1}{\frac{16}{16} + \frac{9}{16}} = \frac{1}{\frac{25}{16}} = \frac{16}{25}$$

~~$\delta w \omega = \frac{4}{5}$~~

u'

$\delta w \omega = -\frac{4}{5}$

$\delta \psi x = -\frac{4}{3}$

$$\eta \rho^2 \omega + \delta w^2 \omega = 1$$

$$\eta \rho^2 \omega + \frac{16}{25} = 1$$

$$\eta \rho^2 \omega = \frac{25}{25} - \frac{16}{25}$$

$$\eta \rho^2 \omega = \frac{9}{25}$$

$\eta \rho \omega = \frac{3}{5}$

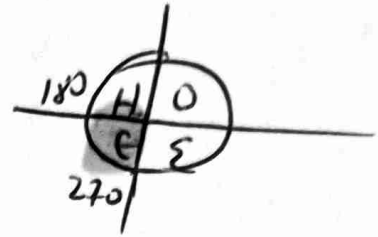
~~$\eta \rho \omega = -\frac{3}{5}$~~

(B)

$$A_v \quad \sigma_{\varphi X} = \frac{\sqrt{2}}{4}$$

$$180 < X < 270$$

$$\varepsilon_{\varphi X} = \frac{4}{\sqrt{2}}$$



$$\sigma_{W^2 W} = \frac{1}{1 + c_{\varphi^2 W}} = \frac{1}{1 + \left(\frac{4}{\sqrt{2}}\right)^2} = \frac{1}{1 + \frac{16}{2}}$$

$$\sigma_{W^2 W} = \frac{1}{\frac{2}{2} + \frac{16}{2}} = \frac{1}{\frac{18}{2}} = \frac{2}{18} = \frac{1}{9}$$

$$\sigma_{W W} = \frac{1}{3}$$

$$\sigma_{W W} = -\frac{1}{3}$$

$$\eta_{P^2 W} + \sigma_{W^2 W} = 1$$

$$\eta_{P^2 W} + \frac{1}{9} = 1$$

$$\eta_{P^2 W} = 1 - \frac{1}{9}$$

$$\eta_{P^2 W} = \frac{9}{9} - \frac{1}{9}$$

$$\eta_{P^2 W} = \frac{8}{9}$$

~~$$\eta_{P W} = \frac{\sqrt{8}}{3}$$~~

$$\eta_{P W} = -\frac{\sqrt{8}}{3}$$

Επορα Μαθης

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10

⑤, → Παρ e-class  
Μαθης 23/10  
Ασκηση 3

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