

αγκ. 4 - Β'ΟΜ / Σελ. 70

$$\varepsilon_1: y = \mu x \iff -\mu x + y = 0$$

$$\varepsilon_2: (1+\mu)x = (1-\mu)y \iff (1+\mu)x - (1-\mu)y = 0$$

ένα διάνυσμα ~~παράλληλο~~ $\vec{u}$ που είναι $\approx \vec{u} = (-1, -1)$

$$\Rightarrow \quad \rightarrow \rightarrow \quad \rightarrow \rightarrow \quad \rightarrow \rightarrow \quad s_2 \quad \rightarrow \rightarrow \quad v = (1-\mu, 1+\mu)$$

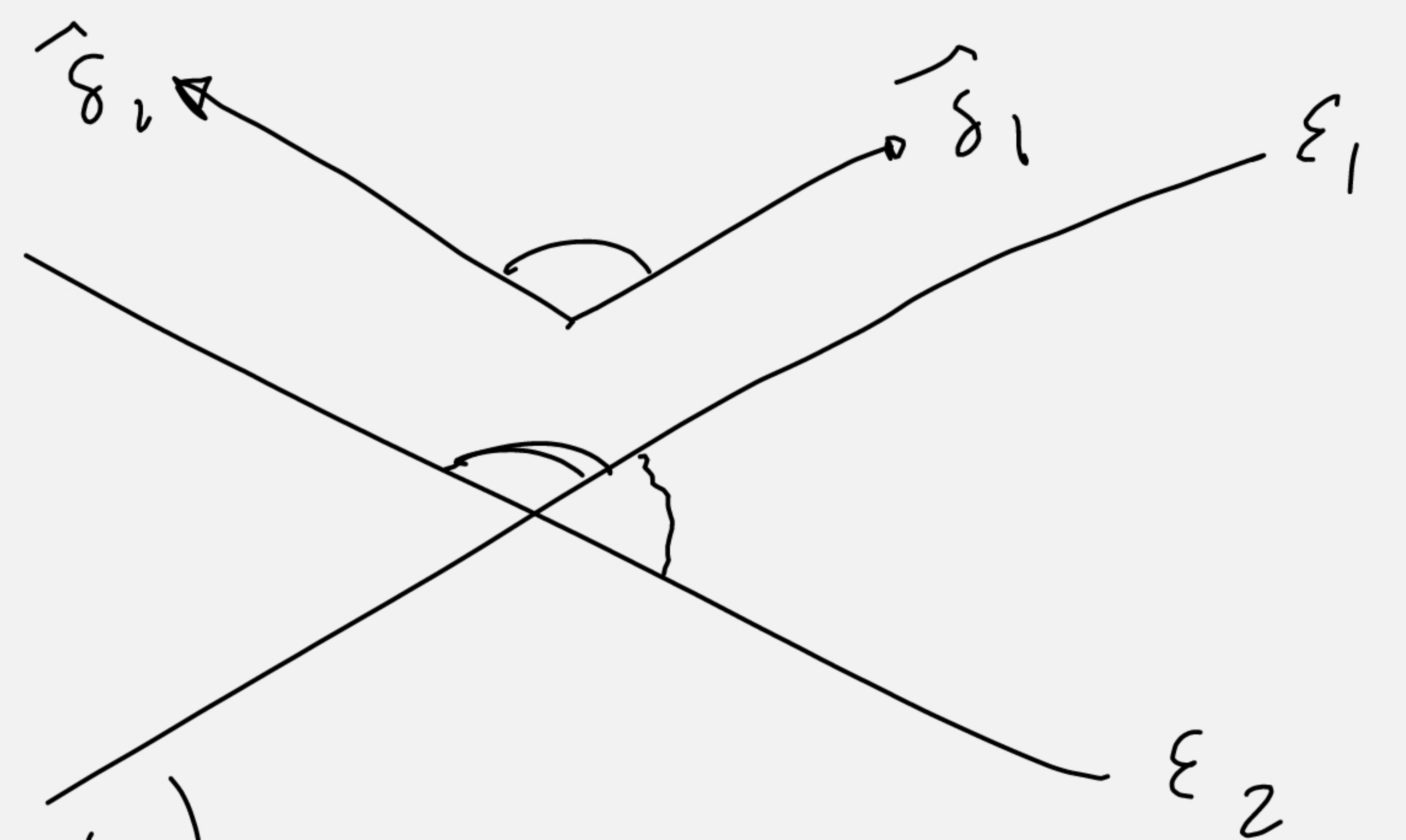
$$Av \quad \varphi = (\bar{u}, \bar{v}) \Rightarrow$$

$$\cos \varphi = \frac{\vec{u} \cdot \vec{v}}{|\vec{u}| \cdot |\vec{v}|} = \frac{-1(1-k) - k(1+k)}{\sqrt{(-1)^2 + (-k)^2} \cdot \sqrt{(1-k)^2 + (1+k)^2}} = \frac{-1+k - k - k^2}{\sqrt{1+k^2} \cdot \sqrt{1-2k+k^2+1+2k+k^2}} =$$

$$= \frac{-1-k^2}{\sqrt{1+k^2} \cdot \sqrt{2+2k^2}} = \frac{-(1+k^2)}{\sqrt{1+k^2} \cdot \sqrt{2(1+k^2)}} = \frac{-(1+k^2)}{\sqrt{1+k^2} \cdot \sqrt{2} \cdot \sqrt{(1+k^2)}} = \frac{-(1+k^2)}{\sqrt{2} \cdot \sqrt{(1+k^2)^2}} = \frac{-1}{\sqrt{2}} = -\frac{\sqrt{2}}{2}$$

6. Vektor $\vec{u}$ und $\vec{v}$ sind orthogonal, wenn $\cos \varphi = 0$.

Το συννη/ζονο ης ος ϵ_1, ϵ_2 $\sqrt{1+k^2} \cdot \sqrt{2+2k^2}$ $\sqrt{1+k^2} \cdot \sqrt{2(1+k^2)}$ $\sqrt{1+k^2}$
 ηωvια ϵ_1 $\frac{\sqrt{2}}{2}$, η ηωvια ϵ_2 45° .



αλμ. 1-Β'ΟΜ / ΣΕΛ. 70

$$(ii) \quad x^2 - y^2 - 4x + 2y + 3 = 0 \quad (1)$$

$$-y^2 + 2y + x^2 - 4x + 3 = 0 \Leftrightarrow$$

$$y^2 - 2y - x^2 + 4x - 3 = 0 \quad (2)$$

Θα θεωρήσουμε ως άρ. y

$$\text{δηλ. } ay^2 + by + \gamma. \text{ με } a=1, b=-2$$

$$\gamma = -x^2 + 4x - 3.$$

$$\Delta = b^2 - 4a\gamma = (-2)^2 - 4 \cdot 1 \cdot (-x^2 + 4x - 3) =$$

$$= 4 + 4x^2 - 16x + 12 = 4x^2 - 16x + 16 =$$

$$4(x^2 - 4x + 4) = 4(x-2)^2$$

καθ'ε εωςία: $y = \lambda x + b$

0, ρίξω να χρησιμοποιήσω

$$y_{1,2} = \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{2 \pm \sqrt{4 \cdot \sqrt{(x-2)^2}}}{2 \cdot 1} =$$

$$= \frac{2 \pm 2(x-2)}{2} = 1 \pm (x-2)$$

$$(2) \quad (-1 \pm (x-2)) \cdot (y - y_2) = 0 \Leftrightarrow$$

$$\left[y - (1 + (x-2)) \right] \cdot \left[y - (1 - (x-2)) \right] = 0$$

$$(y - (x-1)) \cdot (y - (-x-1)) = 0 \Leftrightarrow$$

$$y - (x-1) = 0 \quad \text{ή} \quad y - (-x-1) = 0$$

$$y = x-1$$

$$y = -x-1$$

2 ευθεις