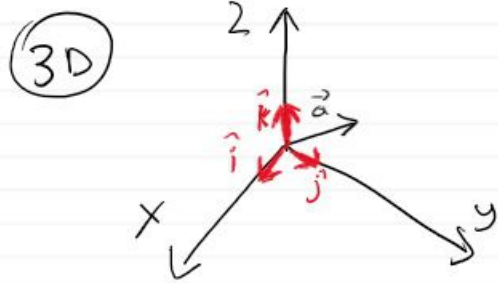
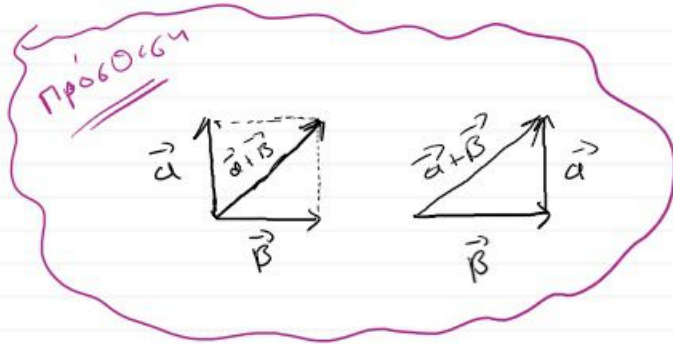
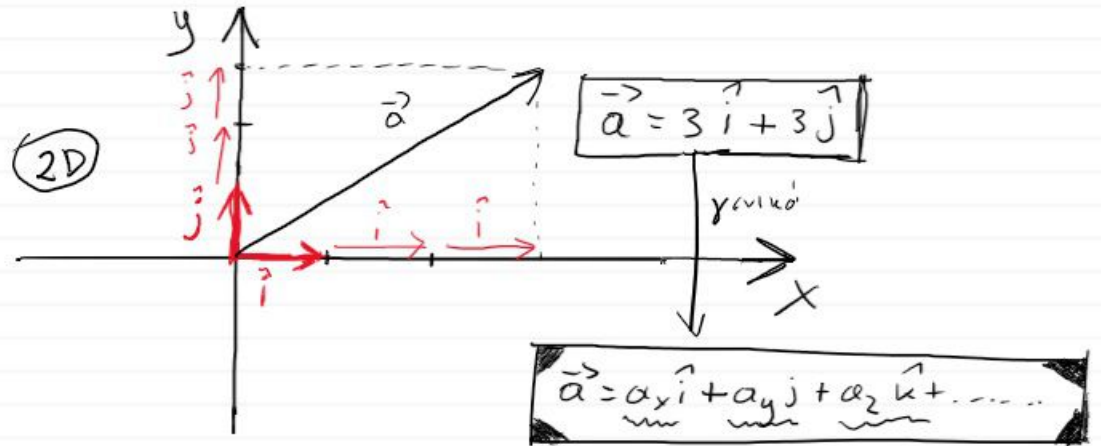
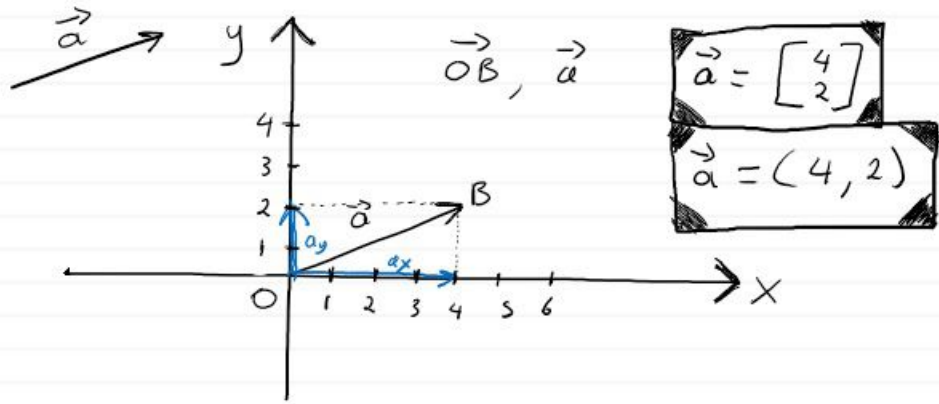




Διαρίσματα (Vectors)



Εφαρμογή

$$\vec{m} = 4\vec{i} - 2\vec{j} + 3\vec{k}$$

$$\vec{p} = -3\vec{i} + 2\vec{j} + \vec{k}$$

$$\vec{m} + \vec{p} = \vec{j}$$

$$\vec{m} + \vec{p} = 4\vec{i} + (-3\vec{i}) - 2\vec{j} + 2\vec{j} + 3\vec{k} + \vec{k} = \vec{i} + 4\vec{k}$$





Μέτρο Διαυγματος

$\vec{a} = 4\hat{i} + 3\hat{j}$ $|\vec{a}| = 5$

$|\vec{a}|^2 = 4^2 + 3^2 \Rightarrow |\vec{a}| = \sqrt{4^2 + 3^2} = \sqrt{16 + 9} = \sqrt{25} = 5$

$\vec{a} = a_x\hat{i} + a_y\hat{j} + a_z\hat{k} + \dots$

* γενικά μέτρο $\vec{a} \Rightarrow |\vec{a}| = \sqrt{a_x^2 + a_y^2 + a_z^2 + \dots}$

$\theta = \arctan\left(\frac{3}{4}\right)$

Εφαντομένον
 τόξο

Εφαντομένον: tangent \rightarrow tan

Αντίστροφα: tan' ή arctan ή atan

'Ασκηση 1

$\vec{B} = 4\hat{i} + 3\hat{j}$ $|\vec{B}| = \sqrt{4^2 + 3^2} = \sqrt{25} = 5$





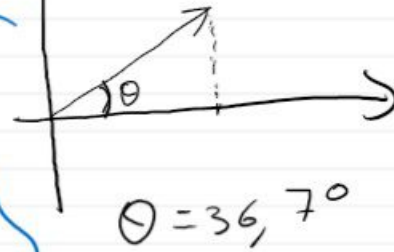
'Ασκηση 1

$$\vec{B} = 4\hat{i} + 3\hat{j} \quad |\vec{B}| = \sqrt{4^2 + 3^2} = \sqrt{25} = 5$$

$$\theta = \arctan\left(\frac{3}{4}\right) = 36,7^\circ$$

Εφ. $\rightarrow \tan$

$$\tan \theta = \frac{3}{4}$$



μετατροπή
ακτίνα σε
πούρες \rightarrow

$$\pi \quad 180^\circ$$

$$\text{ακτίνα} \rightarrow 0,64 \quad ; \leftarrow \text{πούρες}$$

$$0,64 \cdot 180 / \pi \rightarrow \text{πούρες}$$

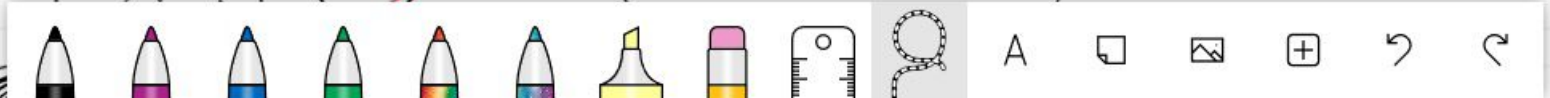
'Ασκηση 2 \rightarrow [σώμα σε κίνηση]

$$t = 1 \text{ sec} / 5 \text{ sec}$$

y



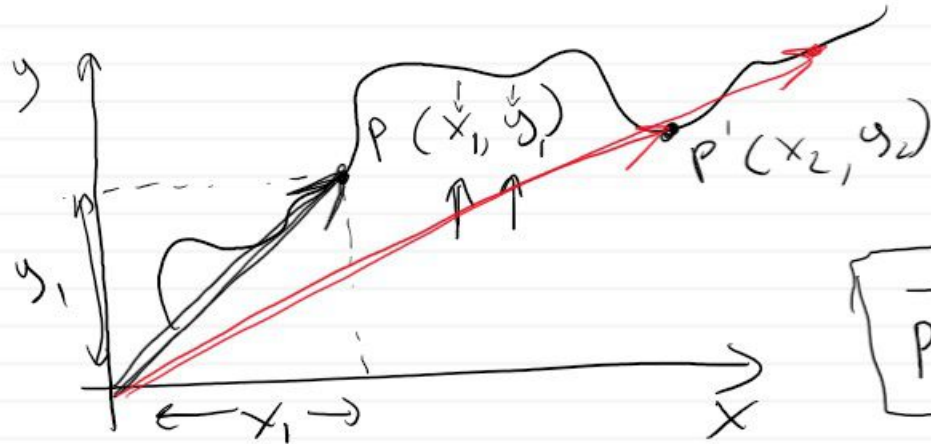
$$x(t) = 2t$$





Άσκηση 2 → [σώμα σε κίνηση]

$t = 1 \text{ sec} / 5 \text{ sec}$

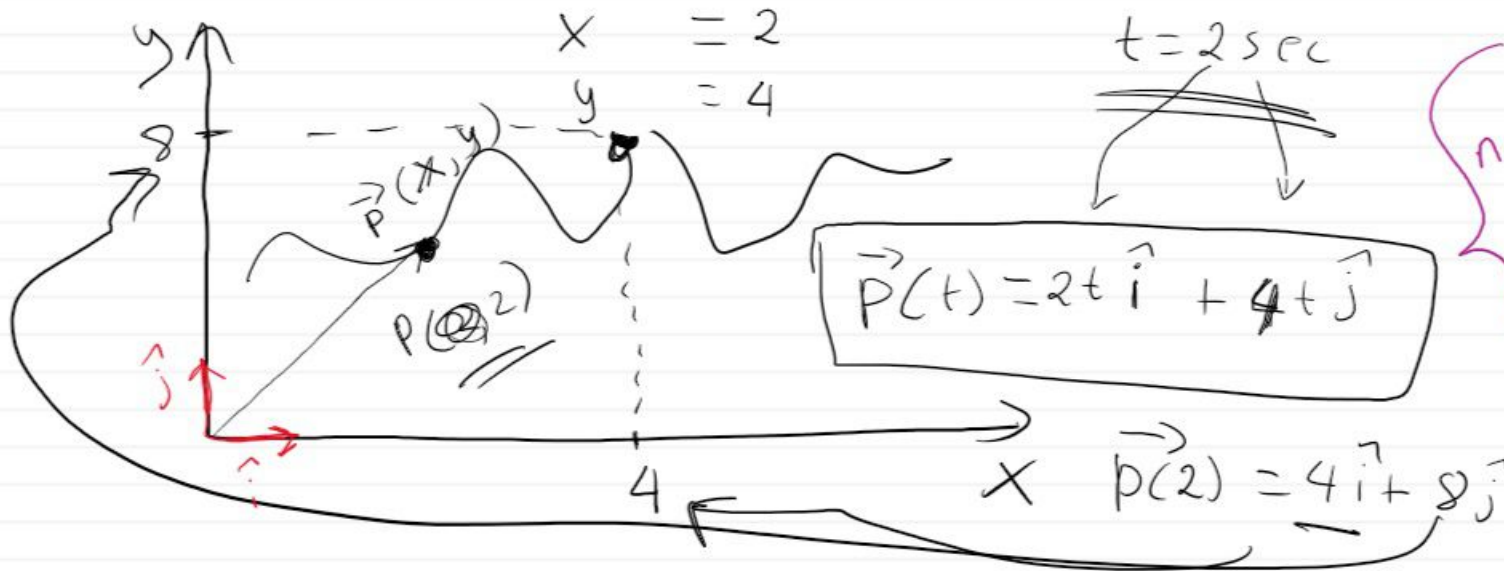


$$x(t) = 2t$$

$$y(t) = 5 + 3t^2$$

$$\vec{p}(t) = 2t\vec{i} + (5 + 3t^2)\vec{j}$$

η θέση του είναι συνάρτηση του χρόνου!!!



~~$t = 2 \text{ sec}$~~

$$\vec{p}(t) = 2t\vec{i} + 4t\vec{j}$$

Νοιά η θέση του σώματος σε $t = 2 \text{ sec}$

$$\vec{p}(2) = 4\vec{i} + 8\vec{j}$$



Asunon 3

←

$$\vec{r}(t) = 2t^2 \hat{i} + (2+3t)\hat{j}$$

$$|\vec{v}| = j$$

$$|\vec{a}| = j \quad t = 2 \text{ sec}$$

$$\vec{v} = \frac{d\vec{r}(t)}{dt}$$

$$\vec{v} = \frac{dx}{dt}$$

$$\vec{v}(t) = 4t \hat{i} + 3 \hat{j}$$

$$t=2 \quad \vec{v}(2) = 8\hat{i} + 3\hat{j} \quad |\vec{v}(2)| = \sqrt{8^2 + 3^2} = \sqrt{73} \text{ m/s}$$

$$\vec{a} = \frac{d\vec{v}(t)}{dt} \quad \text{in} \quad \frac{d^2\vec{r}(t)}{dt^2}$$

$$\vec{a} = 4\hat{i}$$

$$|\vec{a}| = \sqrt{4^2} = 4 \text{ m/s}^2$$

$$\vec{a}(t) = 4 \cdot t \hat{i}$$

$$\vec{F}(t) = 4t \hat{i} - 5t \hat{j}$$

$$\vec{v}(t) = 4\hat{i} - 5\hat{j}$$

$$\vec{a}(t) = \vec{0}$$

