

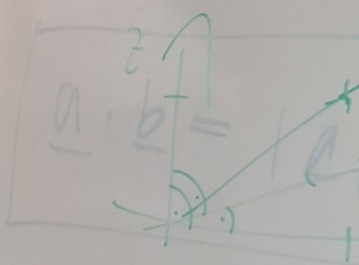
$$\textcircled{1} \quad \underline{a}(1, 3, 2) \quad \underline{b}(-1, 2, 4) \\ \underline{c}(4, 1, 3)$$

$$\textcircled{6} \quad \begin{pmatrix} 3 \cdot 4 - (-2) \cdot 2 \\ -2 \cdot (-1) - 1 \cdot (4) \\ 1 \cdot 2 - 3 \cdot (-1) \end{pmatrix} =$$

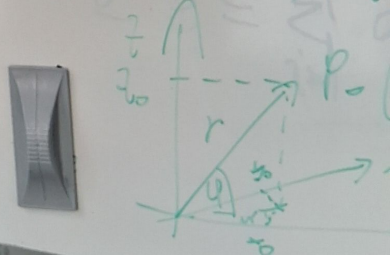
$$\textcircled{7} \quad = \begin{pmatrix} 12 + 4 \\ 2 - 4 \\ 2 + 3 \end{pmatrix} = \begin{pmatrix} 16 \\ -2 \\ 5 \end{pmatrix}$$

Coordi

① Carte



② Poln



$$\begin{array}{l} \underline{a} (a_1, a_2, a_3) \in \mathbb{R}^3 \rightarrow \underline{a} \in \mathbb{R}^n \\ \underline{b} (b_1, b_2, b_3) \in \mathbb{R}^3 \rightarrow \underline{b} \in \mathbb{R}^n \end{array} \left. \vphantom{\begin{array}{l} \underline{a} \in \mathbb{R}^n \\ \underline{b} \in \mathbb{R}^n \end{array}} \right\} n \geq 2, i, n \in \mathbb{N}^+$$

$$\underline{a} \cdot \underline{b} = |\underline{a}| |\underline{b}| \cos \angle$$

$$\underline{a} \cdot \underline{b} = \sum_{i=1}^3 a_i b_i$$

$$\delta_{ij} = \begin{cases} 1, & \text{if } i=j \\ 0, & \text{if } i \neq j \end{cases} \quad \varepsilon_{ijk} = \begin{cases} 1, & \text{if } (i,j,k) \text{ is a permutation of } (1,2,3) \\ 0, & \text{otherwise} \end{cases}$$

$$\underline{a} \cdot \underline{b} = \sum_{i=1}^n a_i b_i, \quad n \in \mathbb{N}^+ \setminus \{1\}$$

$$ii) \underline{a} \times \underline{b} =$$

$$iii) (\underline{a} + 3\underline{b}) \times$$

$$iv) \text{proj}_{\underline{a}} \underline{b}$$

és a következő számokat.

Indexes_Deriv_jegyzet...

Videók

linalg2019.pdf

farska applinelo pra...

OSG 30.2.1 - Prof. H.

$$i) -2a + b =$$

$$ii) a \times b =$$

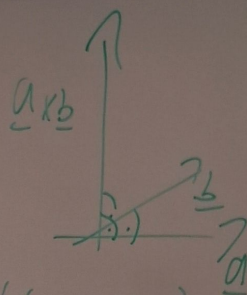
$$iii) (a + 3b) \times (a - b) =$$

$$iv) \text{proj}_a b$$

$$i, n \in \mathbb{N}^+$$

$$(b) \underline{a} \times \underline{b}$$

$$|\underline{a} \times \underline{b}| = |\underline{a}| \cdot |\underline{b}| \cdot \sin \theta$$



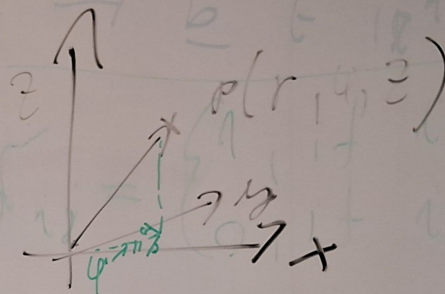
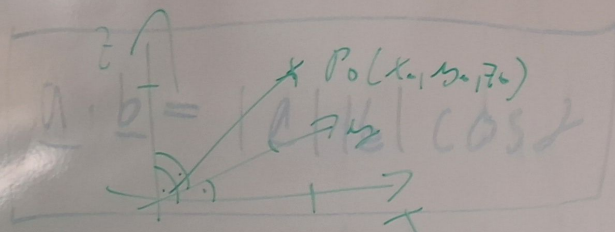
$$\underline{a} = (a_1, a_2, a_3) \quad \underline{b} = (b_1, b_2, b_3)$$

$$\underline{a} \times \underline{b} = \begin{pmatrix} a_2 \cdot b_3 - a_3 \cdot b_2 \\ a_3 \cdot b_1 - a_1 \cdot b_3 \\ a_1 \cdot b_2 - a_2 \cdot b_1 \end{pmatrix}$$

Coordinate systems

③ Cylindrical

① Cartesian

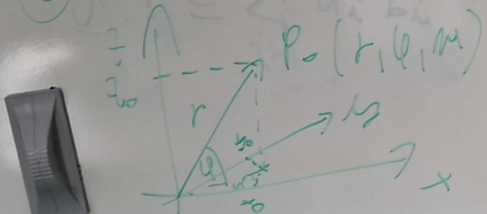


$$x_0 = r \cdot \cos \phi$$

$$y_0 = r \cdot \sin \phi$$

$$z_0 = z_0$$

② Polar coordinate system



$$\begin{aligned} x_0 &= r \cos \phi \\ y_0 &= r \sin \phi \\ z_0 &= z_0 \end{aligned}$$

Age Group	Percentage
18-24	18%
25-34	22%
35-44	15%
45-54	12%
55-64	10%
65-74	8%
75-84	5%
85+	3%

