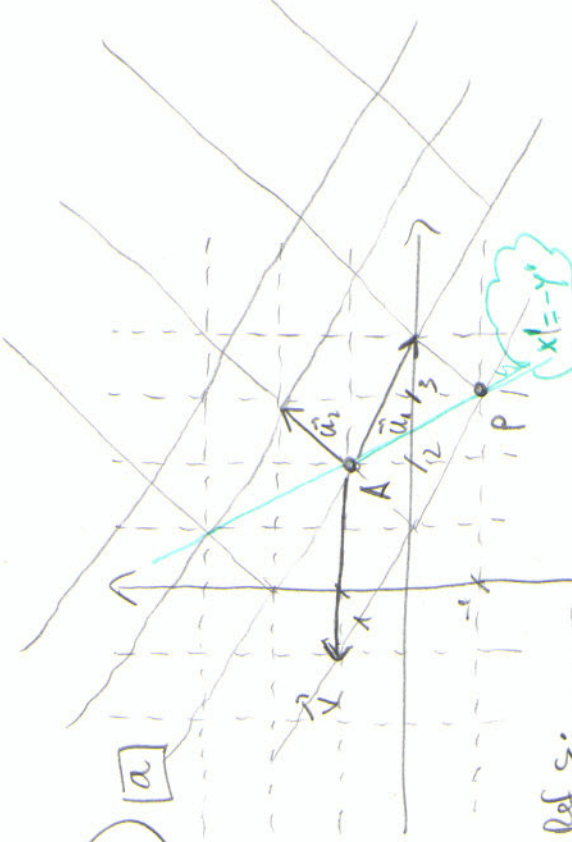


ALGUNS EXERCICIS RESOLTS DE

L'EXAMEN FET A CLASSE (data 23/maig/2017)

- ① ② ③ es van fer a classe

4) [a]



$P = (3, -1)_R = (1, -1)_S$
 $\vec{v} = (-3, 0)_R = (-1, -1)_S$

Ref S:
 $A = (2, 1)_R$
 $\vec{u}_1 = (2, -1)_R$
 $\vec{u}_2 = (1, 1)_R$

gràficament,

[b]

Canvi de S a R:

$$\begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 2 \\ 1 \end{pmatrix} + \begin{pmatrix} 2 & 1 \\ -1 & 1 \end{pmatrix} \begin{pmatrix} x' \\ y' \end{pmatrix}$$

A

Canvi de R a S:

son les matrius espacions, aïllant però $\begin{pmatrix} x' \\ y' \end{pmatrix}$

$$M = \begin{pmatrix} 2 & 1 \\ -1 & 1 \end{pmatrix} \rightarrow M^{-1} = \begin{pmatrix} 1/3 & -1/3 \\ 1/3 & 2/3 \end{pmatrix}$$

$$\begin{pmatrix} x' \\ y' \end{pmatrix} = \begin{pmatrix} 1/3 & -1/3 \\ 1/3 & 2/3 \end{pmatrix} \left[\begin{pmatrix} x \\ y \end{pmatrix} - \begin{pmatrix} 2 \\ 1 \end{pmatrix} \right]$$

[c] (in verd) En coord. R, l'equació de $x' = -y'$

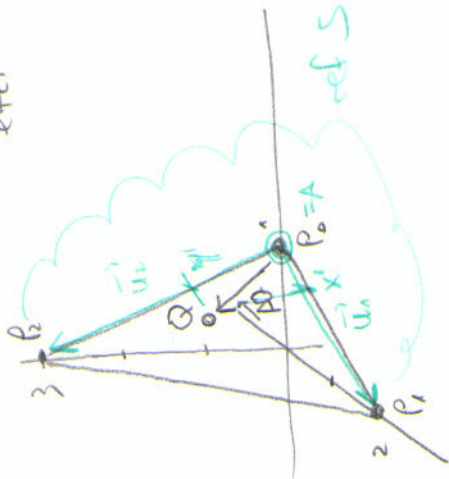
$s_5 : y = 5 - 2x_1$

5

$$P_1: 6x + 3y + 2z = 6$$

$$P_2: (1, 0, 0) \quad P_3: (0, 2, 0) \quad P_4: (0, 0, 3)$$

a. Componentes = $6 \cdot 1 + 3 \cdot 0 + 2 \cdot 0 \stackrel{?}{=} 6$ etc.



b. (En vect)

c. $Q = (x, y, z) = (x, y, z)$

$$\vec{AQ} = x' \vec{u}_1 + \gamma' \vec{u}_2 \quad (\text{rebas entre las proyecciones } x' \gamma' \text{ i el vector } \vec{AQ})$$

$$Q - A = x' \vec{u}_1 + \gamma' \vec{u}_2$$

$$(x, y, z) - (1, 0, 0) = x' \cdot (\underbrace{P_1 - P_0}_{\vec{u}_1}) + \gamma' \cdot (\underbrace{P_2 - P_0}_{\vec{u}_2})$$

$$(x, y, z) - (1, 0, 0) = x' \cdot (-1, 2, 0) + \gamma' \cdot (-1, 0, 3)$$

$$(x, y, z) = (1, 0, 0) + x'(-1, 2, 0) + \gamma'(-1, 0, 3)$$

canvi de R a S

$$\left. \begin{array}{l} -x' - \gamma' = x - 1 \\ 2x' = y \\ 3\gamma' = z \end{array} \right\} \text{ canvi de S a R}$$

$$\begin{array}{l} x' = \frac{y}{2} \\ \gamma' = \frac{z}{3} \end{array}$$
