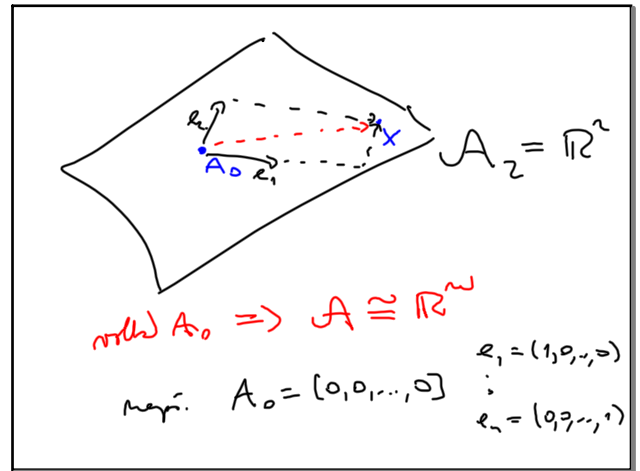
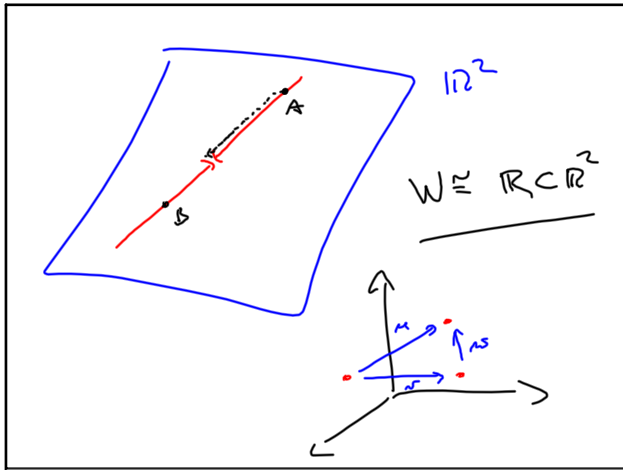


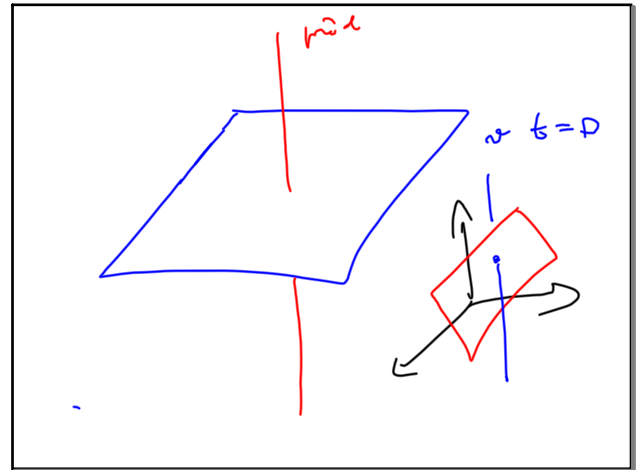
11 26-16:04



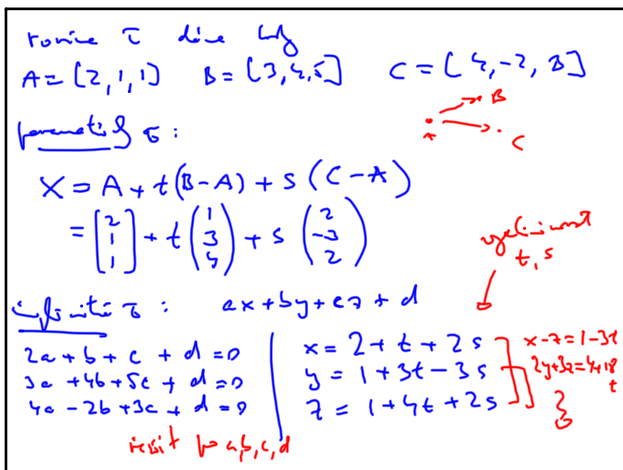
11 26-16:26



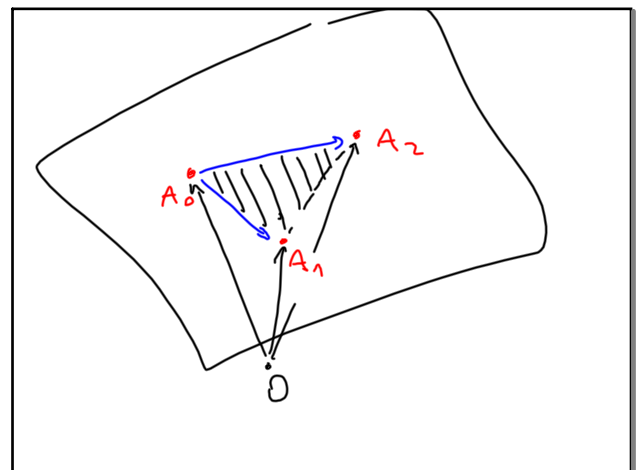
11 26-16:32



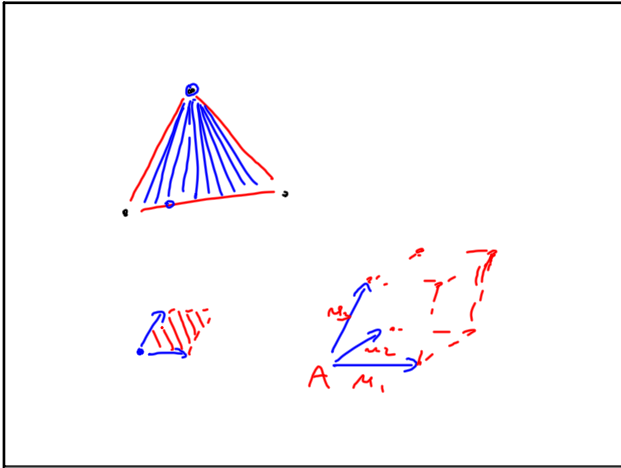
11 26-16:42



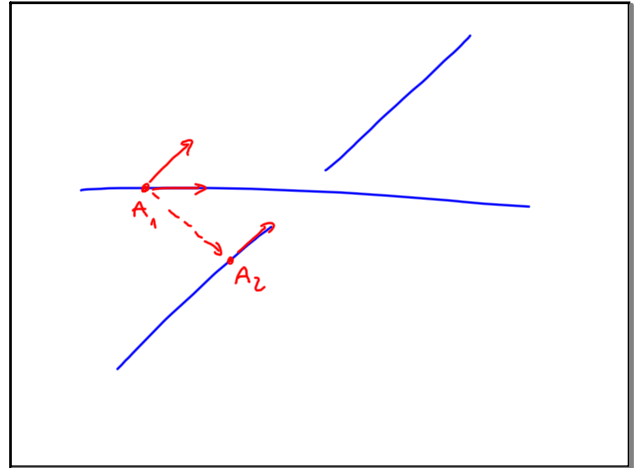
11 26-16:59



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11 26-17:20



11 26-17:25

$x+y=0$
 $x-z=0$

$\rightarrow \text{Sep } \mathbb{R}^3$
 $B = [0, -1, 1] \in \mathcal{P}$

$A = [1, 1, 1]$ base of \mathbb{R}^3

$\langle A, \mathcal{P} \rangle \subset \mathbb{R}^3$ (noise)

$A + \mathcal{Z}(A, B) + \mathcal{Z}(Q_1) + \mathcal{Z}(Q_2)$
 $\langle (0, 2, 0) \rangle$ " ? " 0

$\mathcal{Z}(Q_1) = \{ \text{line } \subset \text{ homogeneous system} \}$
 $= \langle (1, -1, 1) \rangle$

Q_1
 Q_2

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$\mathcal{Z}(Q) = \langle (0, 1, 0), (1, -1, 1) \rangle$

Q kernel of:

$$\begin{bmatrix} 1 \\ 1 \\ 1 \end{bmatrix} + t \begin{bmatrix} 0 \\ 1 \\ 0 \end{bmatrix} + s \begin{bmatrix} 1 \\ -1 \\ 1 \end{bmatrix}$$

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kernel of: $Q: A + tM + sN + \dots$

$Q: \begin{cases} x = a_x + tM_x + sN_x + \dots \\ y = a_y + tM_y + sN_y + \dots \\ \vdots \end{cases}$

$Q_2: \begin{cases} x = \dots \\ y = \dots \\ \vdots \end{cases}$

ref:

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$Q_1: [4, -5, 1, -2] + t_1(3, 5, 7, 2) + t_2(1, 3, 5, 1) + t_3(0, 3, 1, 2)$

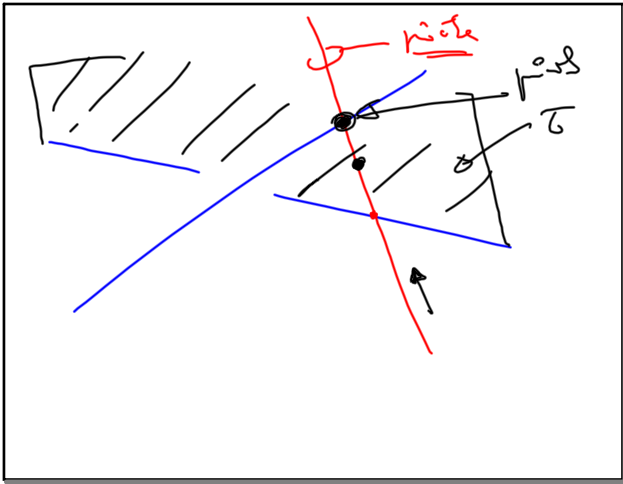
$Q_2: [4, 4, 4, 4] + s_1(0, -6, -2, -4) + s_2(-1, -5, -3, -1) + s_3(-1, -5, -3, -1)$

$Q_1 \cap Q_2:$

$$\begin{bmatrix} x_1 \\ x_2 \\ x_3 \\ x_4 \end{bmatrix} = \begin{bmatrix} 4 \\ -5 \\ 1 \\ -2 \end{bmatrix} + t_1 \begin{bmatrix} 3 \\ 5 \\ 7 \\ 2 \end{bmatrix} + t_2 \begin{bmatrix} 1 \\ 3 \\ 5 \\ 1 \end{bmatrix} + t_3 \begin{bmatrix} 0 \\ 3 \\ 1 \\ 2 \end{bmatrix} = \begin{bmatrix} 4 \\ 4 \\ 4 \\ 4 \end{bmatrix} + s_1 \begin{bmatrix} 0 \\ -6 \\ -2 \\ -4 \end{bmatrix} + s_2 \begin{bmatrix} -1 \\ -5 \\ -3 \\ -1 \end{bmatrix} + s_3 \begin{bmatrix} -1 \\ -5 \\ -3 \\ -1 \end{bmatrix}$$

$$\left(\begin{array}{cccc|cccc} 3 & 2 & 0 & 0 & 1 & 0 & 0 & 0 \\ 4 & 4 & 3 & 6 & 5 & 3 & 9 & 0 \\ 5 & 5 & 1 & 2 & 3 & 5 & 3 & 0 \\ 2 & 1 & 2 & 4 & 3 & 1 & 6 & 0 \end{array} \right) \sim \dots$$

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