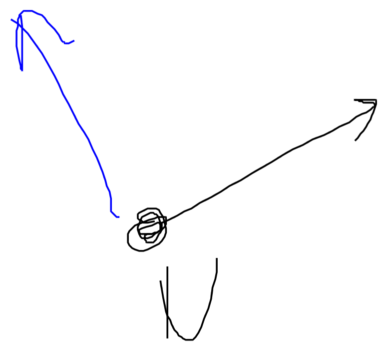
$\mathbb{R}^2$ $\quad \begin{pmatrix} 0 & -1 \\ 1 & 0 \end{pmatrix}$

$$\begin{vmatrix} t & 1 \\ -1 & t \end{vmatrix} = t^2 + 1$$



$$\overline{X} \equiv \begin{pmatrix} X_0 \\ \vdots \\ X_n \end{pmatrix} = (X) \qquad \overline{Y} \equiv \begin{pmatrix} Y_0 \\ \vdots \\ Y_n \end{pmatrix} = (Y)$$

retta $r := XY$

generico punto di r:

$$Z \equiv \begin{pmatrix} Z_0 \\ \vdots \\ Z_n \end{pmatrix} = (Z)$$

$$(z) = \lambda(X) + \mu(Y)$$

Eq. della iperquadrica Q:

$$^t(X) \cdot A \cdot (X) = 0$$

punto generico dello spazio: $X \equiv \begin{pmatrix} x_0 \\ \vdots \\ x_n \end{pmatrix} = (X)$

$Q = [\mathrm{Im}\,[f]]$

Se voglio l'intersezione $r \cap Q$ cerco

$$^t(z) \cdot A \cdot (z) = 0$$

$$^t(\lambda(X) + \mu(Y)) \cdot A \cdot (\lambda(X) + \mu(Y)) = 0$$

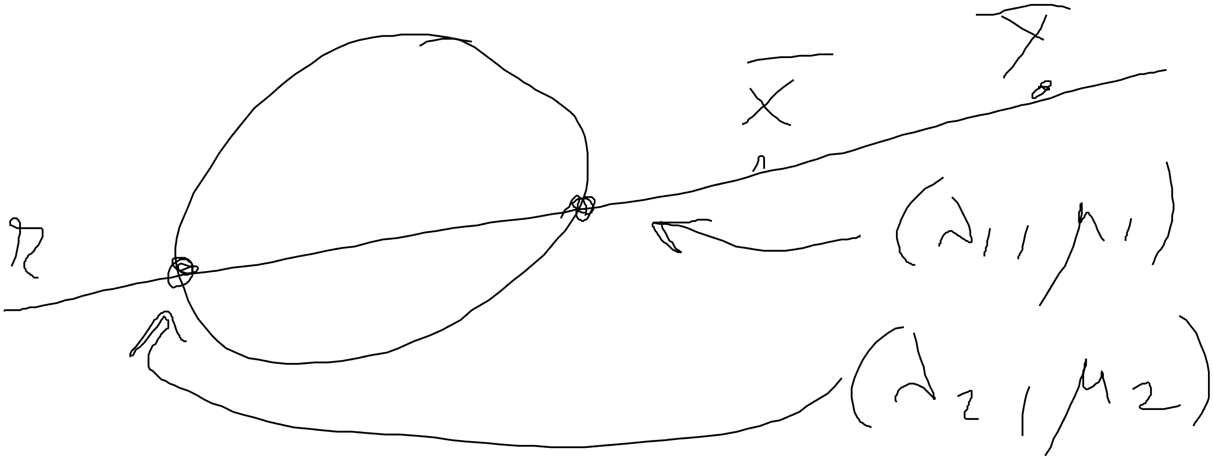
Devo risolvere questa eq. in λ in μ (omogenea di 2° grado).

$$^t(\lambda(\overline{X})+\mu(\overline{Y}))\cdot A\cdot(\lambda(\overline{X})+\mu(\overline{Y}))=0$$

$$\lambda\,^t(\overline{X})\cdot A\cdot(\lambda(\overline{X})+\mu(\overline{Y}))+$$
$$+\mu\,^t(\overline{Y})\cdot A\cdot(\lambda(\overline{X})+\mu(\overline{Y}))=0$$

$$\lambda\,^t(\overline{X})\cdot A\cdot\lambda(\overline{X})+\lambda\,^t(\overline{X})\cdot A\cdot\mu(\overline{Y})+$$
$$+\mu\,^t(\overline{Y})\cdot A\,\lambda(\overline{X})+\mu\,^t(\overline{Y})\cdot A\cdot\mu(\overline{Y})=0$$

$$\lambda^2\,^t(\overline{X})\cdot A\cdot(\overline{X})+2\lambda\mu\,^t(\overline{X})\cdot A\cdot(\overline{Y})+\mu^2\,^t(\overline{Y})\cdot A\cdot(\overline{Y})=0$$


R
$\bar{X}$
$\bar{Y}$
(λ_1, μ_1)
(λ_2, μ_2)