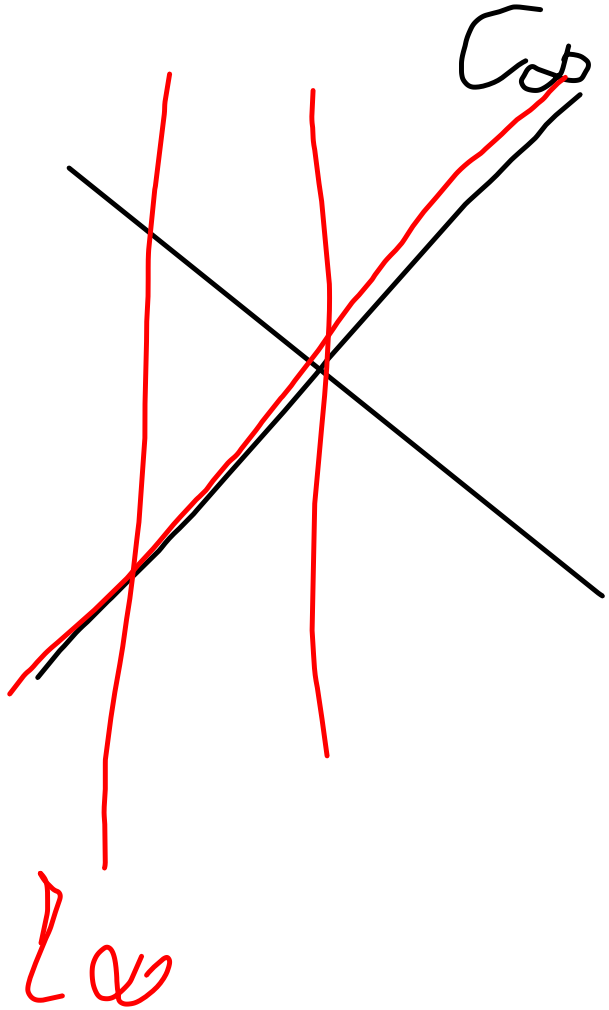
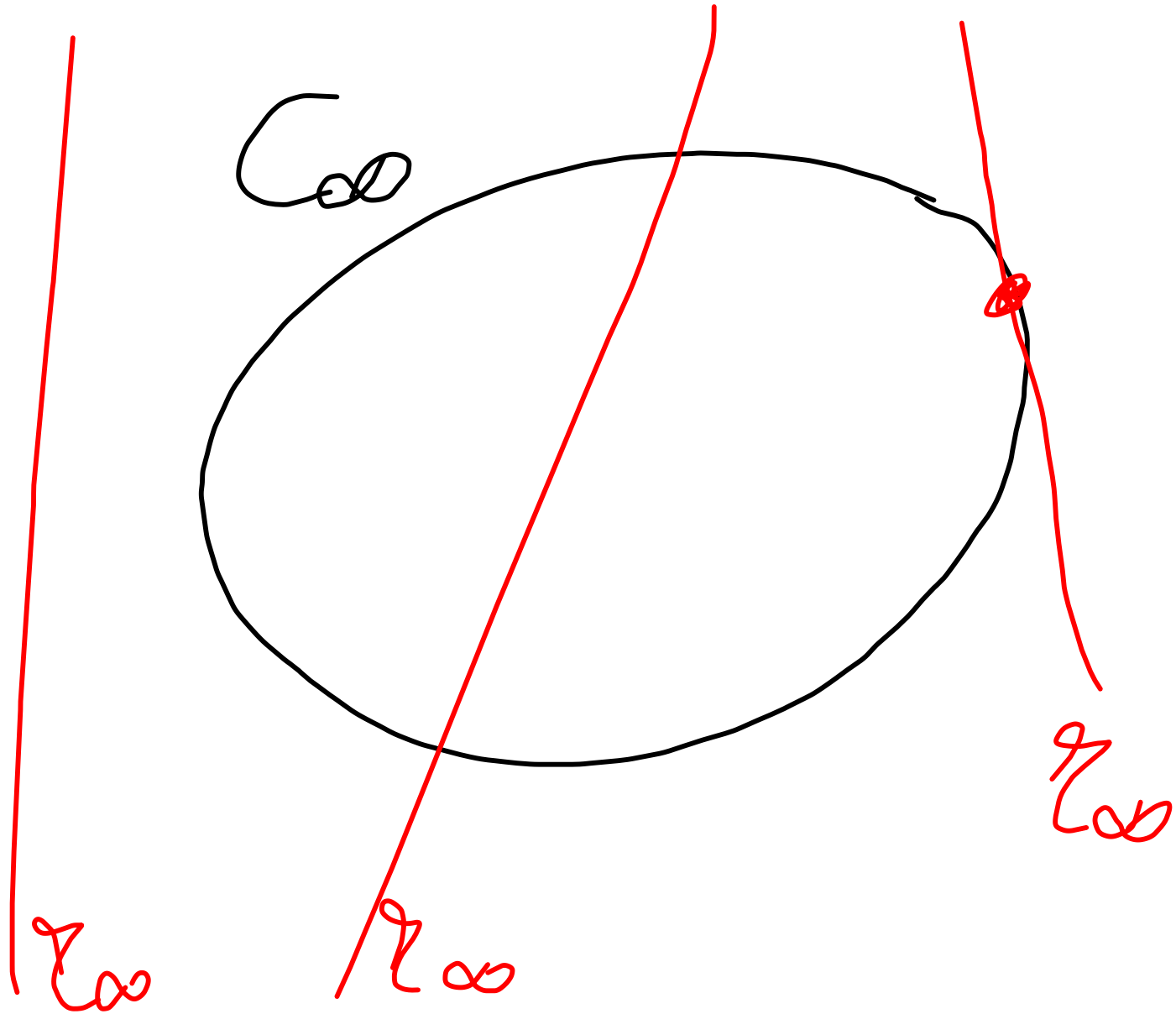


$$\det\begin{pmatrix} a_0^3 & 0 & 0 & a_3^0 \\ 0 & a_1^1 & 0 & 0 \\ 0 & 0 & a_2^2 & 0 \\ a_0^3 & 0 & 0 & a_3^0 \end{pmatrix} =$$

$$= -a_0^3 \cdot a_3^0 \, a_1^1 a_2^2 =$$

$$= -\left(a_3^0\right)^2 a_1^1 a_2^2$$


C_∞
γ_∞
γ_∞
γ_∞

Verificare che la q.

$25x^2 - 7y^2 - 48yz + 7z^2 - 100x + 99 = 0$

è di rotazione e trovarne la spalla di rotazione

$$A = \begin{pmatrix} 99 & -50 & 0 & 0 \\ -50 & 25 & 0 & 0 \\ 0 & 0 & -7 & -24 \\ 0 & 0 & -24 & 7 \end{pmatrix} \qquad \begin{vmatrix} (25-\lambda) & 0 & 0 \\ 0 & (-7-\lambda) & -24 \\ 0 & -24 & (7-\lambda) \end{vmatrix} =$$

$$= (25-\lambda)(\lambda^2 - 625) = -(\lambda-25)^2(\lambda+25)$$

$\lambda = 25$

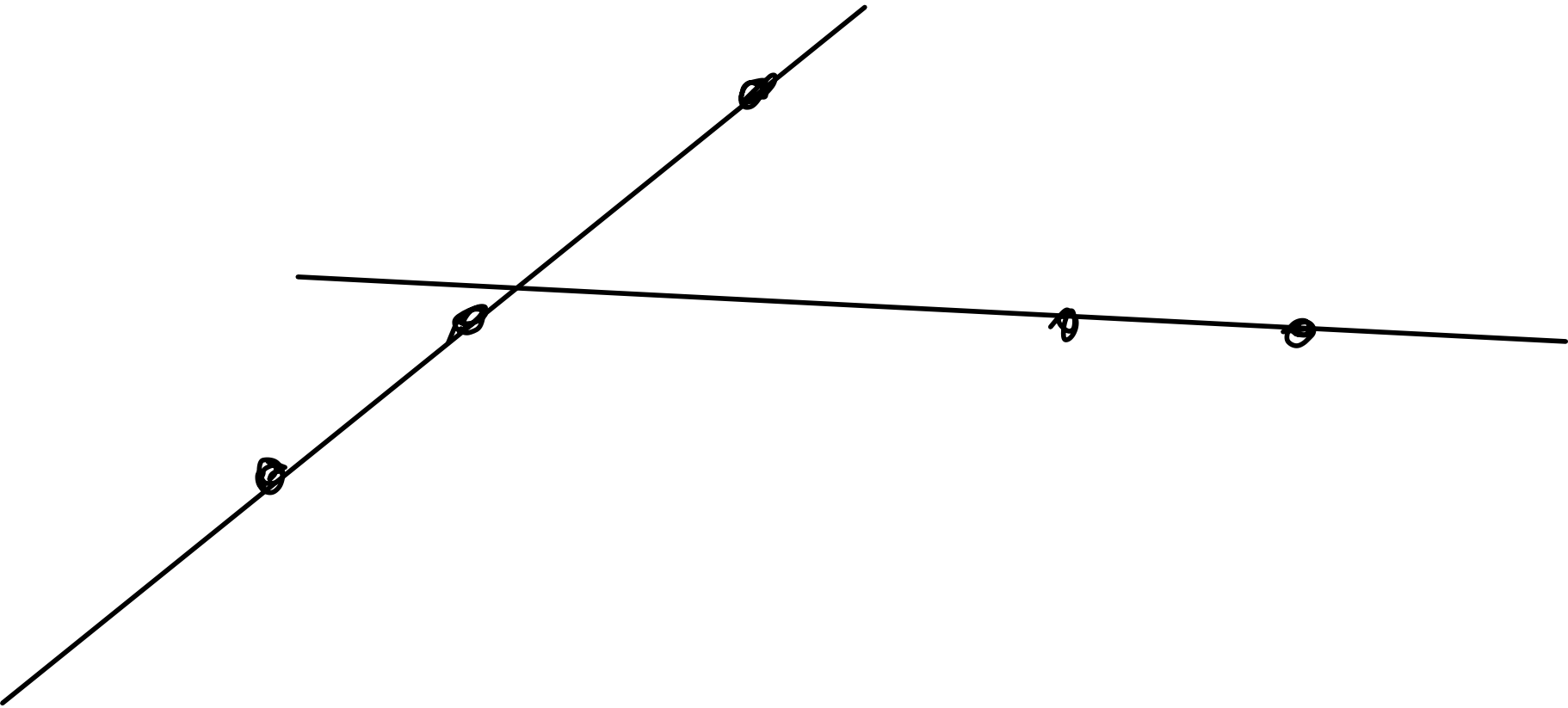
$$\begin{pmatrix} 0 & 0 & 0 \\ 0 & -32 & -24 \\ 0 & -24 & -18 \end{pmatrix} \begin{pmatrix} \ell \\ m \\ h \end{pmatrix} = \begin{pmatrix} 0 \\ 0 \\ 0 \end{pmatrix}$$

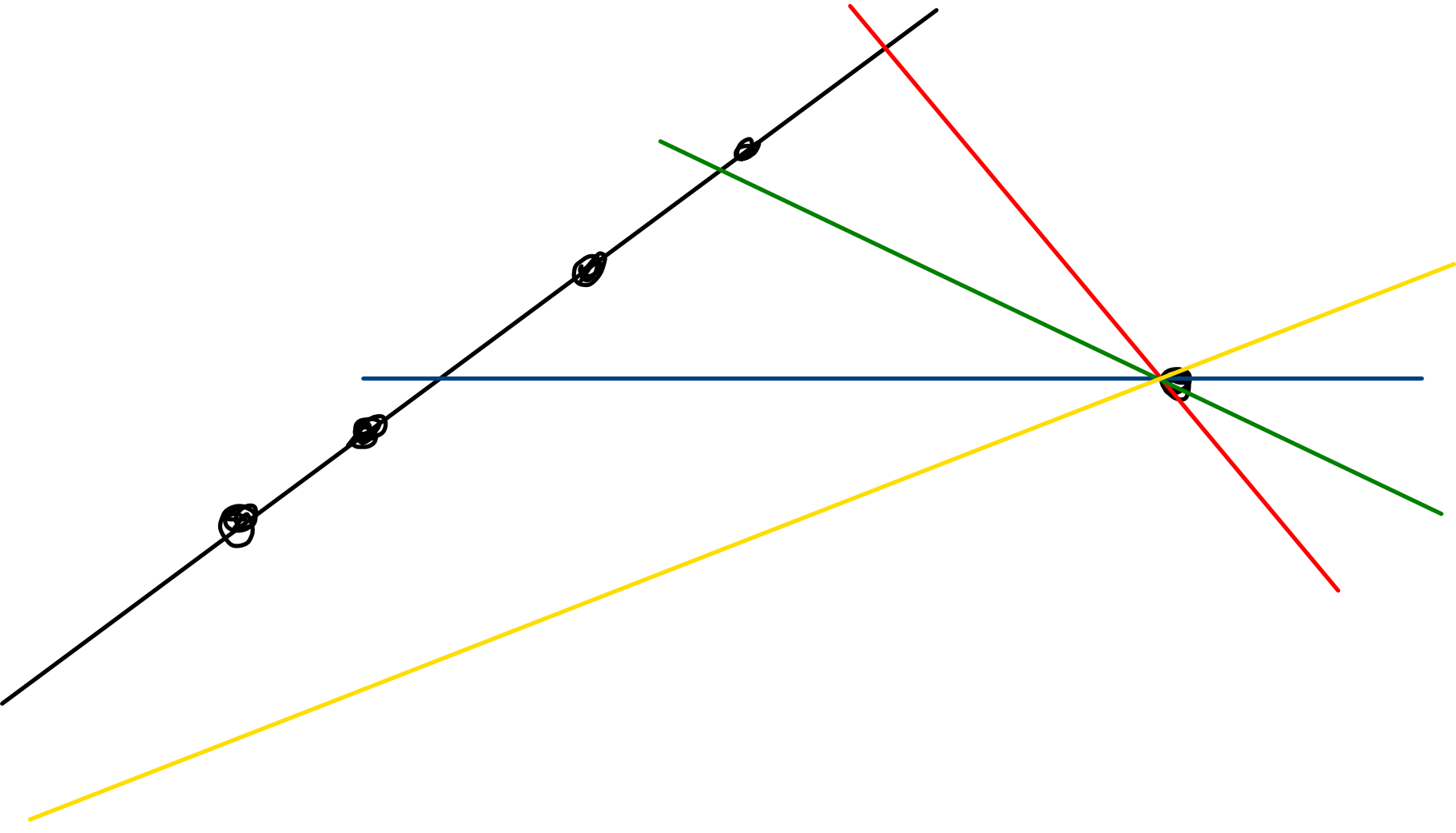
$$\left.\begin{aligned} 0 &= 0 \\ -8(4m-3h) &= 0 \\ -6(4m-3h) &= 0 \end{aligned}\right\}$$

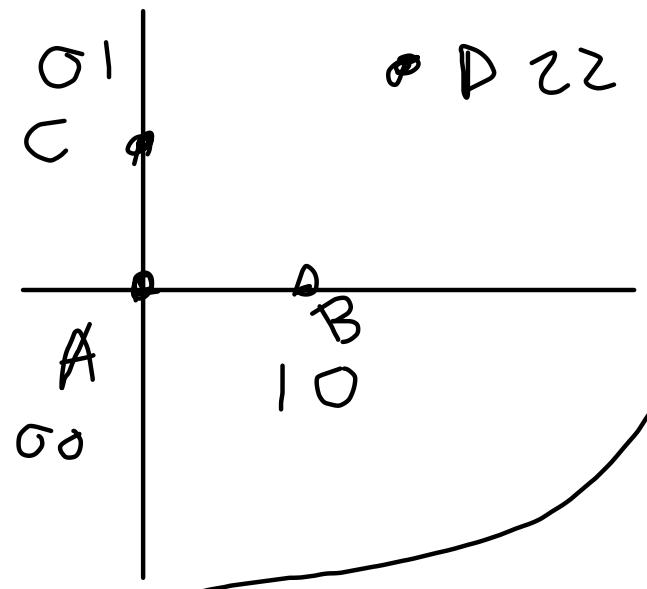
$4m - 3h = 0$ Sol. $\alpha(1,0,0) + \beta(0,3,4)$

$$\begin{pmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 3 & 4 \end{pmatrix} \cdot A \cdot \begin{pmatrix} 1 \\ x \\ y \\ z \end{pmatrix} = 0 \rightarrow \begin{cases} -50 + 25x = 0 \\ -117y - 44z = 0 \end{cases}$$

asse di rotazione







Fascio di coniche per A, B, C, D.

$\Gamma_1 = AC \cup BD$

$\Gamma_2 = AB \cup CD$

$AC : x = 0$ $\quad BD : \frac{x-1}{2-1} = \frac{y-0}{2-0}$ $\quad x - 1 = \frac{y}{2}$

$2x - y - 2 = 0$

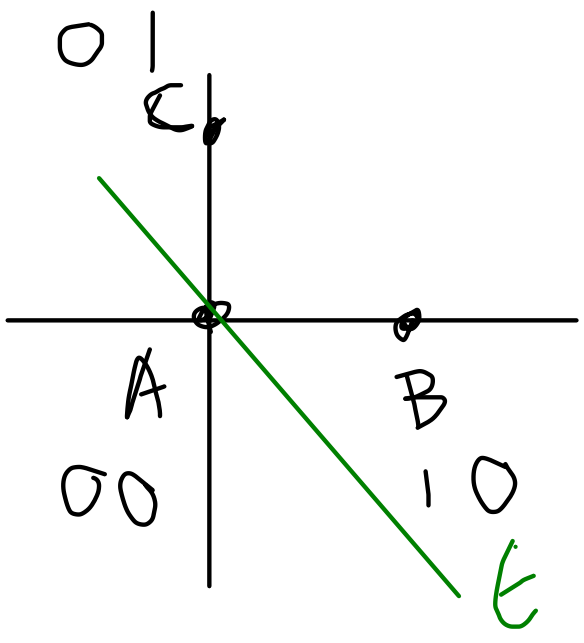
$\Gamma_1 : x(2x - y - 2) = 0$

$AB: y=0$ $\quad CD: \frac{x-0}{2-0} = \frac{y-1}{2-1}$ $\quad \frac{x}{2} = y-1$

$x-2y+2=0$

$\Gamma_2: y(x-2y+2)=0$

$\Gamma: \alpha x(2x-y-2)+\beta y(x-2y+2)=0$



Fascio $\mathcal{F}$ di coniche per A, B, C, tangenti in A a t: $x+y=0$

$\Gamma_1 = t \cup BC$

$\Gamma_2 = AB \cup AC$

BC: $\frac{x-0}{1-0} = \frac{y-1}{0-1}$ $\quad x = -(y-1)$

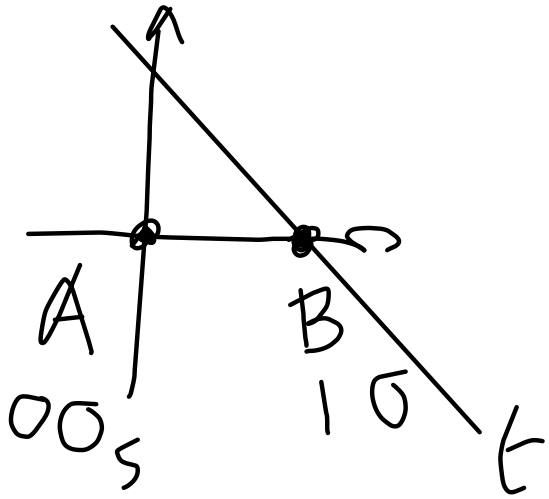
$x+y-1=0$

$\Gamma_1 : (x+y)(x+y-1) = 0$

$AB : y = 0$ $AC : x = 0$

$\Gamma_2 : xy = 0$

$\Gamma_1 : \alpha(x+y)(x+y-1) + \beta xy = 0$



Fascia di coniche per A e B, tangenti in B a $t: x+y-1=0$ in A ad $s: x=0$

$\Gamma_1 = s \cup t$ $\quad \Gamma_2 = AB$ contata 2 volte $y=0$

$\Gamma_1: x(x+y-1)=0 \qquad \Gamma_2: y^2=0$

$\alpha\, x(x+y-1) + \beta y^2 = 0$