$C: 4x^2y - y^3 + 6xy - 8y + 1 = 0$

trovare gli asintoti

$x = \frac{X_1}{X_0}$

$y = \frac{X_2}{X_0}$

$F_i = F'_{X_i}$

$F = 4X_1^2X_2 - X_2^3 + 6X_1X_2X_0 - 8X_2X_0^2 + X_0^3 = 0$

$F_0 = 6X_1X_2 - 16X_2X_0 + 3X_0^2$

$F_1 = 8X_1X_2 + 6X_2X_0$

$F_2 = 4X_1^2 - 3X_2^2 + 6X_1X_0 - 8X_0^2$

	$P_{1\infty}$	$P_{2\infty}$	$P_{3\infty}$
F_0	0	-12	12
F_1	0	-16	16
F_2	4	-8	-8

$$\begin{cases} 4X_1^2X_2 - X_2^3 + 6X_1X_2X_0 - 8X_2X_0^2 + X_0^3 = 0 \\ X_0 = 0 \end{cases} \qquad \begin{cases} X_2(4X_1^2 - X_2^2) = 0 \\ X_0 = 0 \end{cases}$$

$$\begin{cases} X_2(2X_1 + X_2)(2X_1 - X_2) = 0 \\ X_0 = 0 \end{cases}$$

$P_{1\infty} = (0, 1, 0)$

$P_{2\infty} = (0, 1, -2)$

$P_{3\infty} = (0, 1, 2)$

$a_1: 0X_0 + 0X_1 + 4X_2 = 0 \qquad y = 0$

$a_2: -12X_0 - 16X_1 - 8X_2 = 0 \qquad 3 + 4x + 2y = 0$

$a_3: 12X_0 + 16X_1 - 8X_2 = 0 \qquad 3 + 4x - 2y = 0$

Es. 4 $\quad C: y = x^2 \quad C': y = -x^3$

Trovare il luogo $\mathcal{L}$ dei punti d'intersez delle tang a C e C' in punti di uguale ascissa

---

$$C: \begin{cases} x = \alpha \\ y = \alpha^2 \end{cases} \qquad C': \begin{cases} x = \alpha \\ y = -\alpha^3 \end{cases}$$

$P_\alpha \equiv (\alpha, \alpha^2) \qquad Q_\alpha \equiv (\alpha, -\alpha^3)$

$t_\alpha: y - \alpha^2 = 2\alpha(x - \alpha) \qquad t'_\alpha: y + \alpha^3 = -3\alpha^2(x - \alpha)$

$y - \alpha^2 = 2\alpha x - 2\alpha^2 \qquad y + \alpha^3 = -3\alpha^2 x + 3\alpha^3$

$\alpha^2 - 2x\alpha + y = 0 \qquad 2\alpha^3 - 3x\alpha^2 - y = 0$

$$\begin{cases} 2\alpha^3 - 3x\alpha^2 - y = 0 \\ \alpha^2 - 2x\alpha + y = 0 \end{cases}$$

$2\alpha^3 - 3x\alpha^2 - y \quad | \; \alpha^2 - 2x\alpha + y$

$$\frac{y(4y^2 - 3x^2y + 6xy + y - 4x^3)}{4(y - x^2)^2} = 0$$

$$\begin{cases} 2\alpha^3 - 3x\alpha^2 - y = 0 \\ \alpha^2 - 2x\alpha + y = 0 \end{cases}$$

$$\begin{vmatrix} 2 & -3x & 0 & -y & 0 \\ 0 & 2 & -3x & 0 & -y \\ 1 & -2x & y & 0 & 0 \\ 0 & 1 & -2x & y & 0 \\ 0 & 0 & 1 & -2x & y \end{vmatrix}$$

$=$

Es. 13

Podaria $\mathcal{P}$ di $\mathcal{C}: y = x^2$ rispetto ad $A \equiv (3,0)$, cioè luogo delle intersez. delle tangenti a $\mathcal{C}$ con le rispettive normali condotte da A.

$\mathcal{C}: y = x^2$

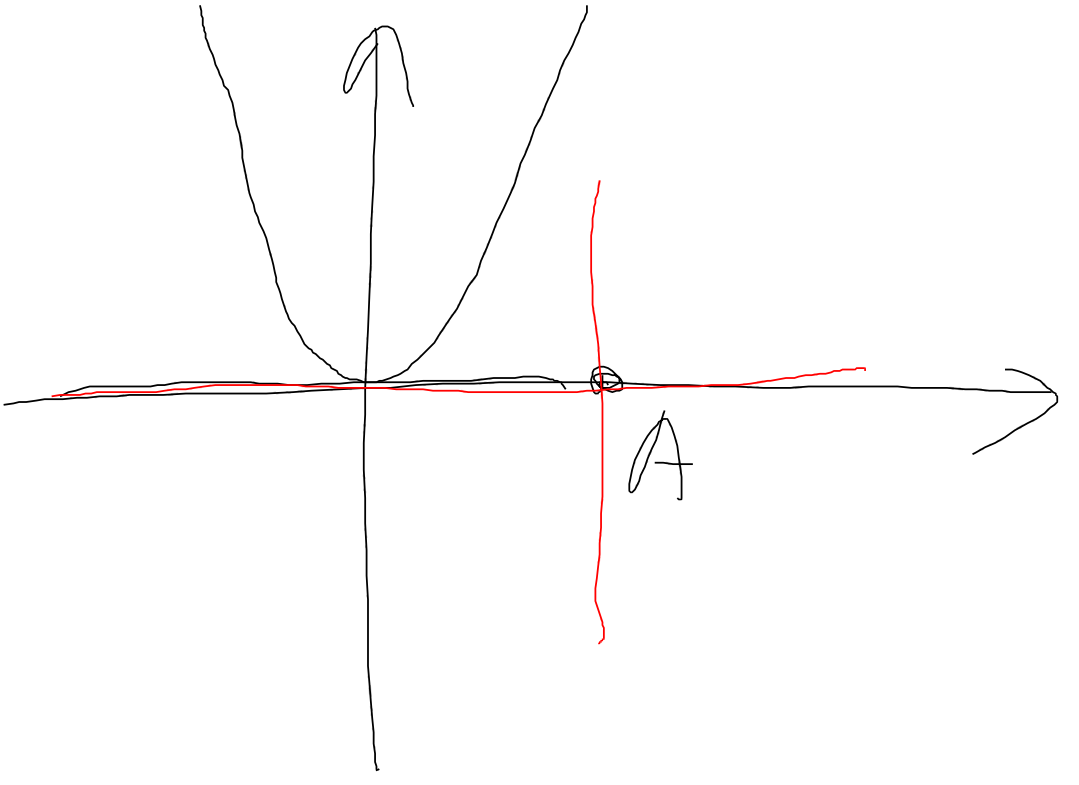
$P \equiv (\alpha, \alpha^2) \quad t_\alpha: y - \alpha^2 = 2\alpha(x - \alpha)$

$n_\alpha: 1(x-3) + 2\alpha(y-0)$

$$\left.\begin{array}{l} t_\alpha \\ h_\alpha \end{array}\right\} \begin{array}{l} \alpha^2 - 2x\alpha + y = 0 \\ 2y\alpha + x - 3 = 0 \end{array}$$

$$\begin{vmatrix} 1 & -2x & y \\ 2y & (x-3) & 0 \\ 0 & 2y & (x-3) \end{vmatrix} =$$

$$4y^3 + 4x^2y - 12xy + x^2 - 6x + 9 = 0$$



$$4y^3 + 4x^2y - 12xy + x^2 - 6x + 9 \leftarrow y = 0 \quad (3, 0)$$

$$f(x, y) =$$

$$f_x = 8xy - 12y + 2x - 6 \qquad 0$$

$$f_y = 12y^2 + 4x^2 - 12x \qquad 0$$