4- $4xy - 3y^2 - 36 = 0$

$4(x'\cos\theta - y'\operatorname{sen}\theta)(x'\operatorname{sen}\theta + y'\cos\theta) - 3(x'\operatorname{sen}\theta + y'\cos\theta)^2 - 36 = 0$

$4[(x')^2 \operatorname{sen}\theta\cdot\cos\theta + x'y'\cos^2\theta - x'y'\operatorname{sen}^2\theta - (y')^2 \operatorname{sen}\theta\cdot\cos\theta] - 3[(x')^2\operatorname{sen}^2\theta + 2\cdot x'y'\operatorname{sen}\theta\cdot\cos\theta + (y')^2\cos^2\theta]$

$(x')^2(4\operatorname{sen}\theta\cdot\cos\theta - 3\operatorname{sen}^2\theta)$

$(x'y')(4\cos^2\theta - 4\operatorname{sen}^2\theta - 6\operatorname{sen}\theta\cdot\cos\theta)$

$(y')^2(-4\operatorname{sen}\theta\cdot\cos\theta - 3\cos^2\theta)$

$4\cos^2\theta - 4\operatorname{sen}^2\theta - 6\operatorname{sen}\theta\cdot\cos\theta = 0 \quad \div 2$

$2\cos^2\theta - 2\operatorname{sen}^2\theta - 3\operatorname{sen}\theta\cdot\cos\theta = 0 \quad \div \cos^2\theta$

$2 - 2\dfrac{\operatorname{sen}^2\theta}{\cos^2\theta} - 3\dfrac{\operatorname{sen}\theta}{\cos\theta} = 0 \qquad u = \operatorname{tg}\theta = \dfrac{\operatorname{sen}\theta}{\cos\theta}$

$2 - 2u^2 - 3u = 0 \cdot (-1)$

$2u^2 + 3u - 2 = 0$

$\Delta = 9 - 4\cdot 2\cdot(-2)$

$\Delta = 25$

$u = \dfrac{-3 \pm 5}{4} \begin{cases} \to -2 \\ \to \dfrac{1}{2} \end{cases}$

$\begin{cases} 2\operatorname{sen}\theta = \cos\theta \\ \operatorname{sen}^2\theta + \cos^2\theta = 1 \end{cases}$

$\operatorname{sen}\theta = \dfrac{1}{\sqrt{5}} \qquad \cos\theta = \dfrac{2}{\sqrt{5}}$

$(x')^2\left(4\cdot\frac{1}{\sqrt{5}}\cdot\frac{2}{\sqrt{5}}-3\cdot\left(\frac{1}{\sqrt{5}}\right)^2\right)$

$\frac{8}{5}-\frac{3}{5}=\frac{5}{5}=1$

$(x'y')\left(4\cdot\left(\frac{2}{\sqrt{5}}\right)^2-4\cdot\left(\frac{1}{\sqrt{5}}\right)^2-6\cdot\frac{1}{\sqrt{5}}\cdot\frac{2}{\sqrt{5}}\right)$

$4\cdot\frac{4}{5}-\frac{4}{5}-\frac{12}{5}=0$

$(y')^2\left(-4\cdot\frac{1}{\sqrt{5}}\cdot\frac{2}{\sqrt{5}}-3\cdot\left(\frac{2}{\sqrt{5}}\right)^2\right)$

$\frac{-8}{5}-3\cdot\frac{4}{5}=\frac{-20}{5}=-4$

$(x')^2-4(y')^2-36=0$

$\frac{(x')^2}{36}-\frac{(y')^2}{9}=1$ $\quad C=(0,0)$

$b=3$ $\quad F_1=(-\sqrt{45},0)$ $\quad A_1=(-6,0)$ $\quad B_1=(0,-3)$

$a=6$ $\quad F_2=(\sqrt{45},0)$ $\quad A_2=(6,0)$ $\quad B_2=(0,3)$

$3^2=c^2-6^2$

$9+36=c^2$

$45=c^2$

$c=\sqrt{45}$

Assíntotas: $y=\frac{3}{6}x$

$y=\pm\frac{1}{2}x$

$e=\frac{c}{a}$

$e=\frac{\sqrt{45}}{6}$

Diretrizes: $L: x_0\pm\frac{a}{e}\Rightarrow L: 0\pm\frac{6}{\frac{\sqrt{45}}{6}}\Rightarrow L: \pm\frac{36}{45}\sqrt{45}=\pm\frac{4}{5}\sqrt{45}$