$$x\,(-x^2 - y + 3)\,y$$

Derivate parziali

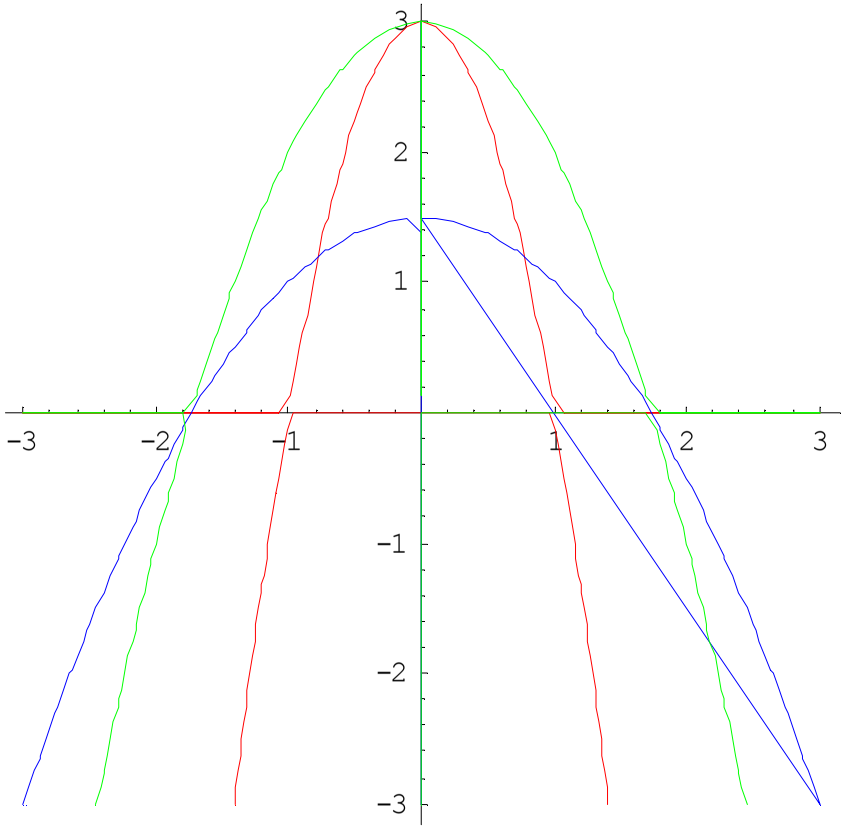
$$-y\,(3\,x^2 + y - 3)$$

$$-x\,(x^2 + 2\,y - 3)$$

Hessiano

$$\begin{pmatrix} -6\,x\,y & -3\,x^2 - 2\,y + 3 \\ -3\,x^2 - 2\,y + 3 & -2\,x \end{pmatrix}$$

sella	$\{0, 0\}$	0	$\begin{pmatrix} 0 & 3 \\ 3 & 0 \end{pmatrix}$	-9
sella	$\{-\sqrt{3}, 0\}$	0	$\begin{pmatrix} 0 & -6 \\ -6 & 2\sqrt{3} \end{pmatrix}$	-36
sella	$\{\sqrt{3}, 0\}$	0	$\begin{pmatrix} 0 & -6 \\ -6 & -2\sqrt{3} \end{pmatrix}$	-36
minimo	$\left\{-\sqrt{\frac{3}{5}}, \frac{6}{5}\right\}$	$-\frac{36\sqrt{\frac{3}{5}}}{25}$	$\begin{pmatrix} \frac{36\sqrt{\frac{3}{5}}}{5} & -\frac{6}{5} \\ -\frac{6}{5} & 2\sqrt{\frac{3}{5}} \end{pmatrix}$	$\frac{36}{5}$
massimo	$\left\{\sqrt{\frac{3}{5}}, \frac{6}{5}\right\}$	$\frac{36\sqrt{\frac{3}{5}}}{25}$	$\begin{pmatrix} -\frac{36\sqrt{\frac{3}{5}}}{5} & -\frac{6}{5} \\ -\frac{6}{5} & -2\sqrt{\frac{3}{5}} \end{pmatrix}$	$\frac{36}{5}$
sella	$\{0, 3\}$	0	$\begin{pmatrix} 0 & -3 \\ -3 & 0 \end{pmatrix}$	-9



$$x\,y\,(-x^2+y+4)$$

Derivate parziali

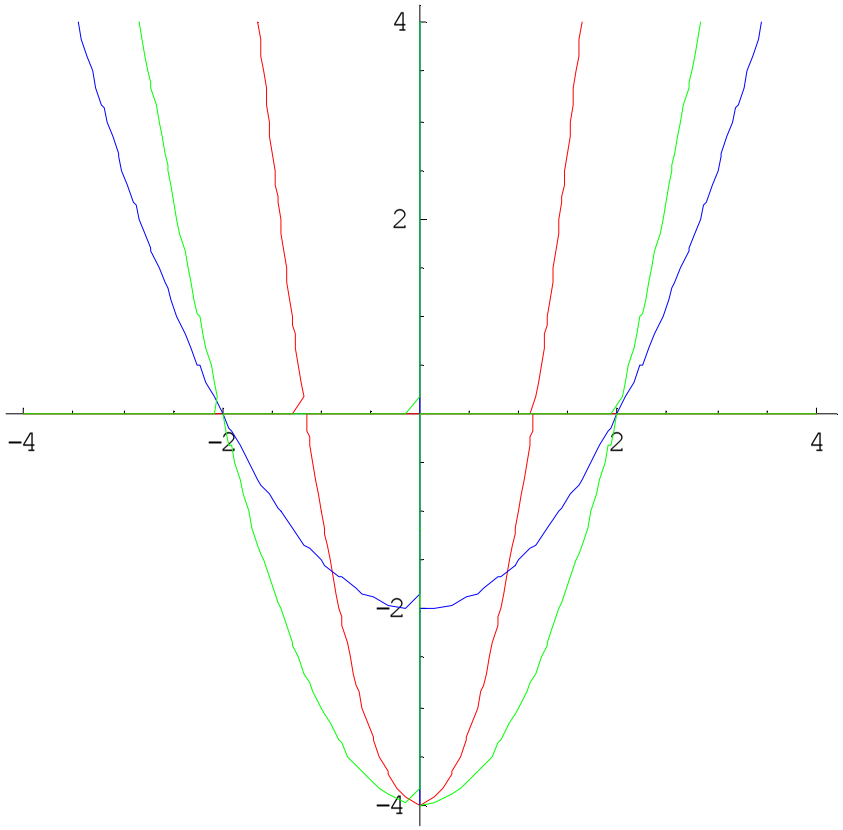
$$y\,(-3\,x^2+y+4)$$

$$-x\,(x^2-2\,y-4)$$

Hessiano

$$\begin{pmatrix} -6\,x\,y & -3\,x^2+2\,y+4 \\ -3\,x^2+2\,y+4 & 2\,x \end{pmatrix}$$

$$\begin{pmatrix} \text{sella} & \{0,\,0\} & 0 & \begin{pmatrix} 0 & 4 \\ 4 & 0 \end{pmatrix} & -16 \\ \text{sella} & \{0,\,-4\} & 0 & \begin{pmatrix} 0 & -4 \\ -4 & 0 \end{pmatrix} & -16 \\ \text{massimo} & \left\{-\frac{2}{\sqrt{5}},\,-\frac{8}{5}\right\} & \frac{128}{25\sqrt{5}} & \begin{pmatrix} -\frac{96}{5\sqrt{5}} & -\frac{8}{5} \\ -\frac{8}{5} & -\frac{4}{\sqrt{5}} \end{pmatrix} & \frac{64}{5} \\ \text{minimo} & \left\{\frac{2}{\sqrt{5}},\,-\frac{8}{5}\right\} & -\frac{128}{25\sqrt{5}} & \begin{pmatrix} \frac{96}{5\sqrt{5}} & -\frac{8}{5} \\ -\frac{8}{5} & \frac{4}{\sqrt{5}} \end{pmatrix} & \frac{64}{5} \\ \text{sella} & \{-2,\,0\} & 0 & \begin{pmatrix} 0 & -8 \\ -8 & -4 \end{pmatrix} & -64 \\ \text{sella} & \{2,\,0\} & 0 & \begin{pmatrix} 0 & -8 \\ -8 & 4 \end{pmatrix} & -64 \end{pmatrix}$$



$$(x + y)\,(y^2 - x)$$

Derivate parziali

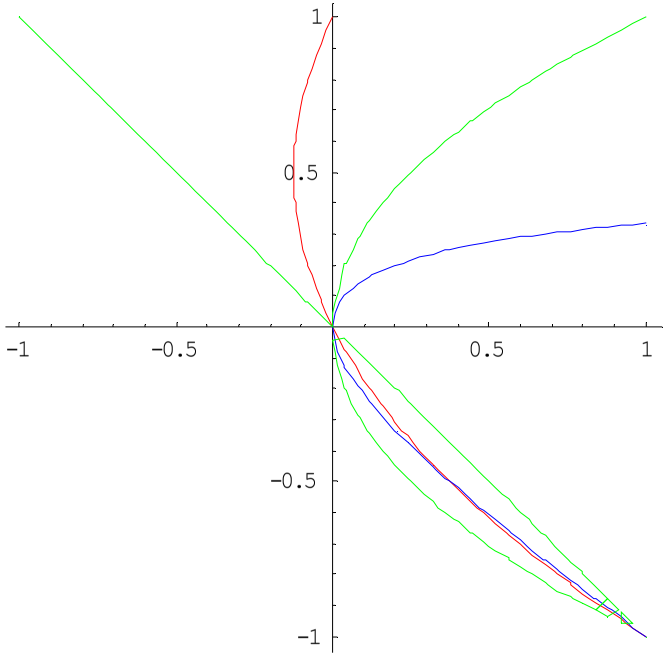
$$y^2 - y - 2\,x$$

$$3\,y^2 + 2\,x\,y - x$$

Hessiano

$$\begin{pmatrix} -2 & 2\,y - 1 \\ 2\,y - 1 & 4\,y + 2\,(x + y) \end{pmatrix}$$

$$\begin{pmatrix} \text{sella} & \{0, 0\} & 0 & \begin{pmatrix} -2 & -1 \\ -1 & 0 \end{pmatrix} & -1 \\ \text{massimo} & \left\{\frac{3}{8}, -\frac{1}{2}\right\} & \frac{1}{64} & \begin{pmatrix} -2 & -2 \\ -2 & -\frac{9}{4} \end{pmatrix} & \frac{1}{2} \\ \text{sella} & \{1, -1\} & 0 & \begin{pmatrix} -2 & -3 \\ -3 & -4 \end{pmatrix} & -1 \end{pmatrix}$$



$$(x - y)\,(y - 4)\,(x + y - 2)$$

Derivate parziali

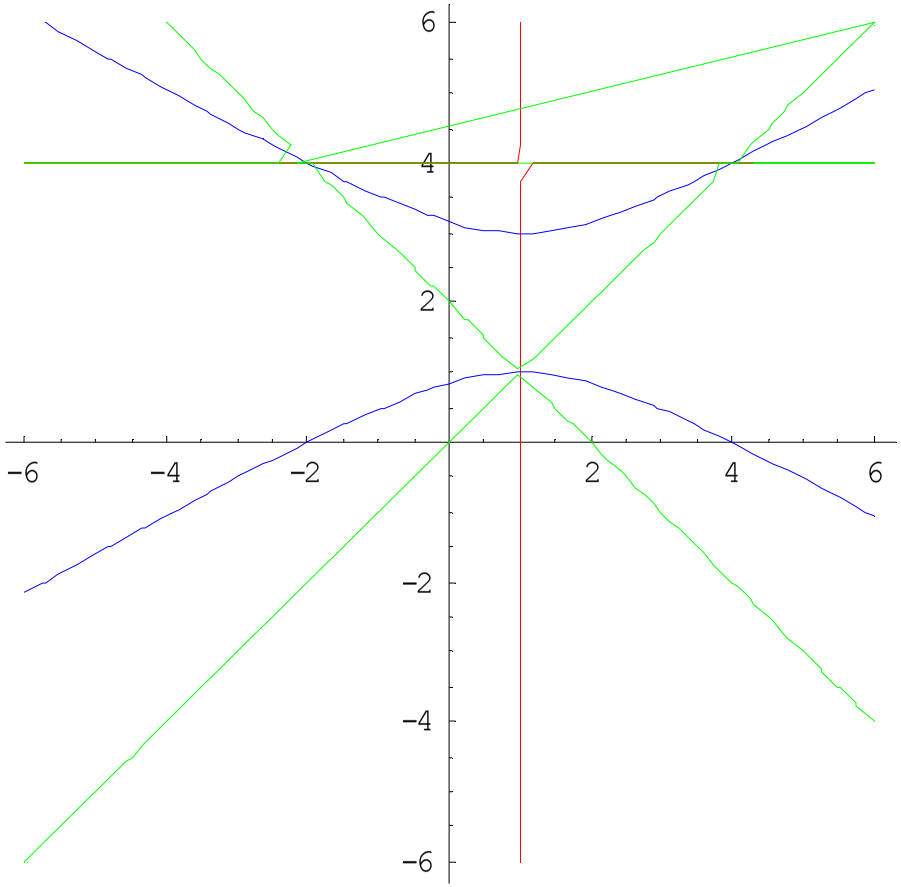
$$2\,(x - 1)\,(y - 4)$$

$$x^2 - 2\,x - 3\,y^2 + 12\,y - 8$$

Hessiano

$$\begin{pmatrix} 2\,(y-4) & 2\,x-2 \\ 2\,x-2 & 2\,(x-2\,y+4)-2\,(x+y-2) \end{pmatrix}$$

$$\begin{pmatrix} \text{sella} & \{-2, 4\} & 0 & \begin{pmatrix} 0 & -6 \\ -6 & -12 \end{pmatrix} & -36 \\ \text{sella} & \{4, 4\} & 0 & \begin{pmatrix} 0 & 6 \\ 6 & -12 \end{pmatrix} & -36 \\ \text{sella} & \{1, 1\} & 0 & \begin{pmatrix} -6 & 0 \\ 0 & 6 \end{pmatrix} & -36 \\ \text{massimo} & \{1, 3\} & 4 & \begin{pmatrix} -2 & 0 \\ 0 & -6 \end{pmatrix} & 12 \end{pmatrix}$$



$$x^2 (-x - y + 3) y^2$$

Derivate parziali

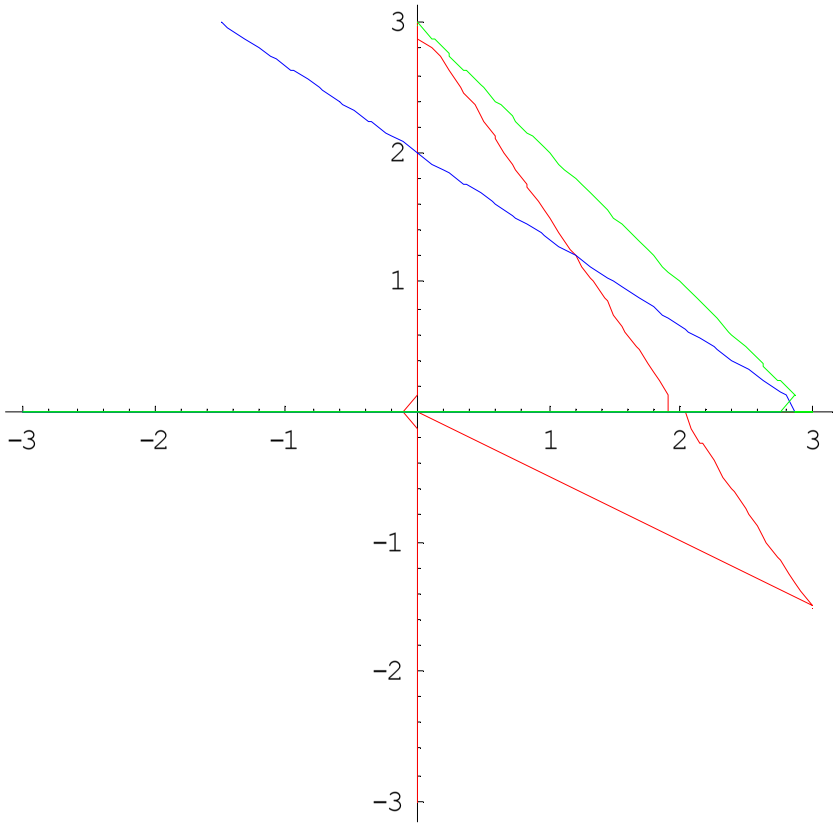
$$-x y^2 (3 x + 2 y - 6)$$

$$-x^2 y (2 x + 3 y - 6)$$

Hessiano

$$\begin{pmatrix} -2 y^3 - 6 x y^2 + 6 y^2 & -6 y x^2 - 6 y^2 x + 12 y x \\ -6 y x^2 - 6 y^2 x + 12 y x & -2 x^3 - 6 y x^2 + 6 x^2 \end{pmatrix}$$

$$\left(\text{massimo} \quad \left\{ \frac{6}{5}, \frac{6}{5} \right\} \quad \frac{3888}{3125} \quad \begin{pmatrix} -\frac{648}{125} & -\frac{432}{125} \\ -\frac{432}{125} & -\frac{648}{125} \end{pmatrix} \quad \frac{46656}{3125} \right)$$



$$x^2 + y^2 + \frac{1}{x + y}$$

Derivate parziali

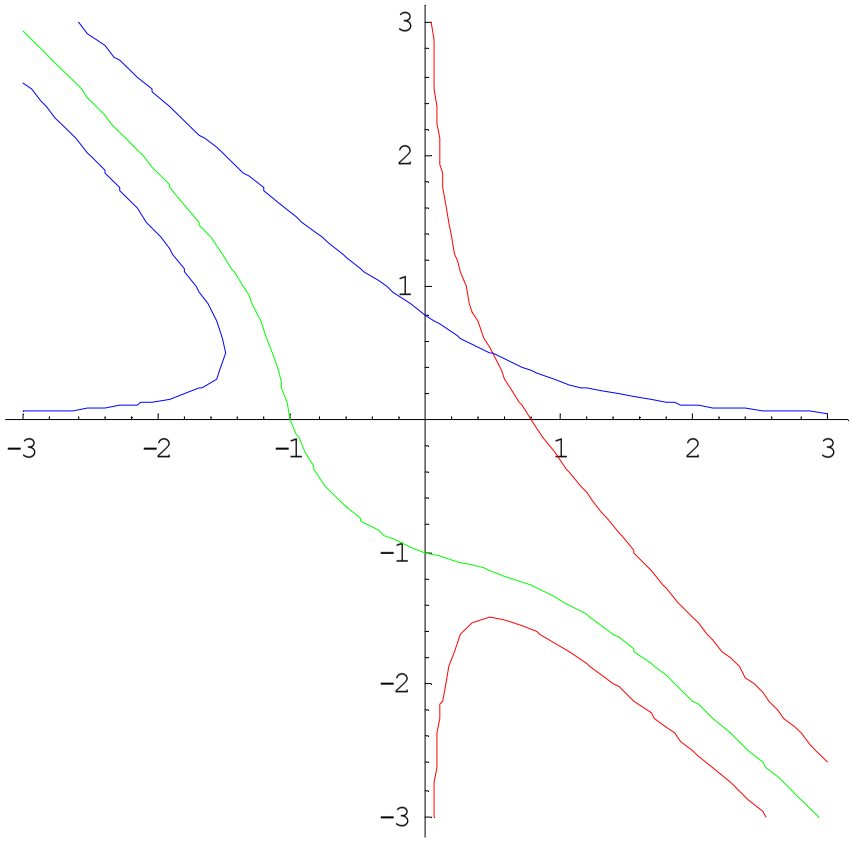
$$\frac{2\,x^3 + 4\,y\,x^2 + 2\,y^2\,x - 1}{(x + y)^2}$$

$$\frac{2\,y^3 + 4\,x\,y^2 + 2\,x^2\,y - 1}{(x + y)^2}$$

Hessiano

$$\begin{pmatrix} 2 + \frac{2}{(x+y)^3} & \frac{2}{(x+y)^3} \\ \frac{2}{(x+y)^3} & 2 + \frac{2}{(x+y)^3} \end{pmatrix}$$

$$\left(\text{minimo } \left\{\tfrac{1}{2}, \tfrac{1}{2}\right\} \ \tfrac{3}{2} \ \begin{pmatrix} 4 & 2 \\ 2 & 4 \end{pmatrix} \ 12\right)$$



$$x^2 + 2y + \frac{1}{x+y}$$

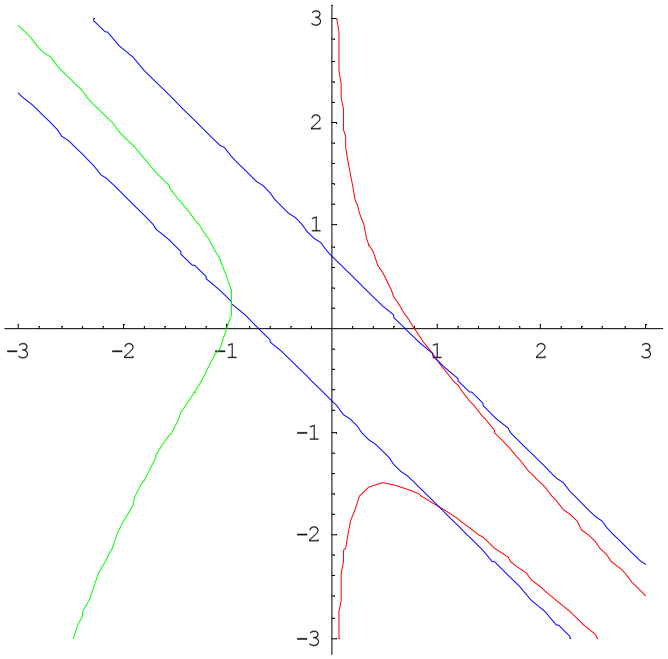
Derivate parziali

$$\frac{2x^3 + 4yx^2 + 2y^2x - 1}{(x+y)^2}$$

$$\frac{2x^2 + 4yx + 2y^2 - 1}{(x+y)^2}$$

Hessiano

$$\begin{pmatrix} 2 + \frac{2}{(x+y)^3} & \frac{2}{(x+y)^3} \\ \frac{2}{(x+y)^3} & \frac{2}{(x+y)^3} \end{pmatrix}$$



$$\begin{pmatrix} \text{sella} & \left\{1, \frac{1}{2}\left(-2-\sqrt{2}\right)\right\} & -1-2\sqrt{2} & \begin{pmatrix} 2-4\sqrt{2} & -4\sqrt{2} \\ -4\sqrt{2} & -4\sqrt{2} \end{pmatrix} & -8\sqrt{2} \\ \text{minimo} & \left\{1, \frac{1}{2}\left(-2+\sqrt{2}\right)\right\} & -1+2\sqrt{2} & \begin{pmatrix} 2+4\sqrt{2} & 4\sqrt{2} \\ 4\sqrt{2} & 4\sqrt{2} \end{pmatrix} & 8\sqrt{2} \end{pmatrix}$$

$$x\,y\,(-x^2 - y^2 + 1)$$

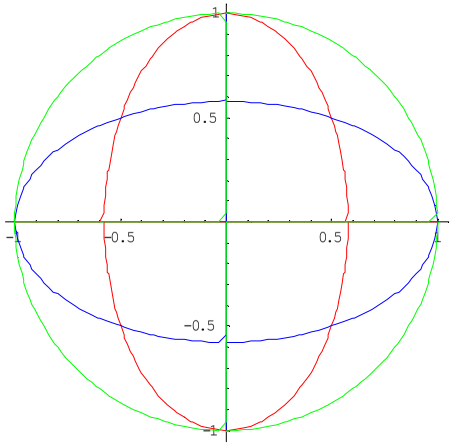
Derivate parziali

$$-y\,(3\,x^2 + y^2 - 1)$$

$$-x\,(x^2 + 3\,y^2 - 1)$$

Hessiano

$$\begin{pmatrix} -6\,x\,y & -3\,x^2 - 3\,y^2 + 1 \\ -3\,x^2 - 3\,y^2 + 1 & -6\,x\,y \end{pmatrix}$$



$$x\,y\,(-x^2 + x - y^2)$$

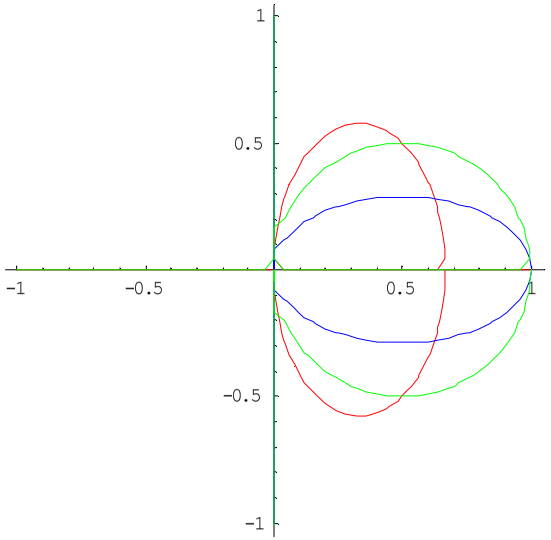
Derivate parziali

$$-y\,(3\,x^2 - 2\,x + y^2)$$

$$-x\,(x^2 - x + 3\,y^2)$$

Hessiano

$$\begin{pmatrix} 2\,y - 6\,x\,y & -3\,x^2 + 2\,x - 3\,y^2 \\ -3\,x^2 + 2\,x - 3\,y^2 & -6\,x\,y \end{pmatrix}$$



$$(x^2 - 1)\,(x - y^2)$$

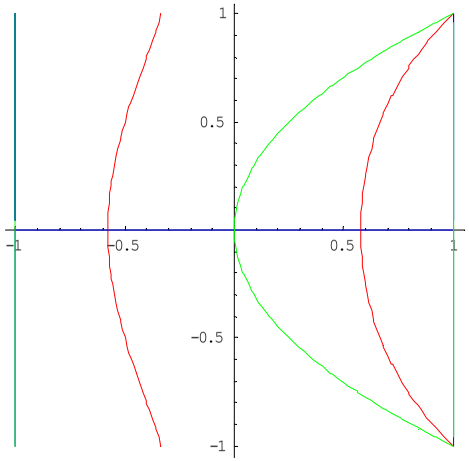
Derivate parziali

$$3\,x^2 - 2\,y^2\,x - 1$$

$$-2\,(x - 1)\,(x + 1)\,y$$

Hessiano

$$\begin{pmatrix} 6\,x - 2\,y^2 & -4\,x\,y \\ -4\,x\,y & 2 - 2\,x^2 \end{pmatrix}$$



$$(x^2 - x)\,(y - y^2)$$

Derivate parziali

$$-(2\,x - 1)\,(y - 1)\,y$$

$$-(x - 1)\,x\,(2\,y - 1)$$

Hessiano

$$\begin{pmatrix} 2\,y - 2\,y^2 & -4\,y\,x + 2\,x + 2\,y - 1 \\ -4\,y\,x + 2\,x + 2\,y - 1 & 2\,x - 2\,x^2 \end{pmatrix}$$