$$X+y=1 \rightarrow h(x,y)=x+y-1$$
  
 $x^2+y^2\leq 1 \rightarrow g(x,y)=x^2+y^2-1$ 

L(x,y,n,1)= f(x,y)+ m.h(x,y)+ d.g(x,y)=x2+y2+xy+ m(x+y-1)+1(x2+y2-1)

1) 
$$\frac{dL}{dx} = 2x + y + \mu + 2\lambda x$$

$$2x+y+y=0 \rightarrow y=-2x-y$$

$$2y+x+y=0 \rightarrow p=-2y-x$$

$$\times = y$$

$$\emptyset \rightarrow x + y - 1 = 0 \rightarrow x + x - 1 = 0 \rightarrow x = \frac{1}{2} \ge 0$$

$$\emptyset \rightarrow x + y - 1 = 0 \rightarrow x + x - 1 = 0 \rightarrow x = \frac{1}{2} \ge 0$$

$$\emptyset = \frac{1}{2} \ge 0$$
Put walling

$$C_{01} \lambda \neq 0$$

$$(2 + 1/2^{2} \ge 0 + 2)\sqrt{2}$$

$$\begin{cases} 2x + y + \mu + 2\lambda x = 0 \\ 2y + x + \mu + 2\lambda y = 0 \end{cases}$$

$$\begin{cases} 2x + y + \mu + 2\lambda y = 0 \\ x^{2} + y^{2} - 1 = 0 \end{cases} \xrightarrow{\chi^{2} + (1 - x)^{2} - 1 = 0} \xrightarrow{\chi = 1} \begin{cases} x = 1 \\ x = 0 \ge 0 \end{cases}$$

$$\begin{cases} x + y + \mu + 2\lambda x = 0 \end{cases} \xrightarrow{\chi^{2} + (1 - x)^{2} - 1 = 0} \xrightarrow{\chi = 1} \begin{cases} x = 0 \ge 0 \\ y = 0 \end{cases} \xrightarrow{\chi = 1} \begin{cases} x = 0 \ge 0 \\ y = 0 \end{cases}$$

$$\begin{cases} x + y + \mu + 2\lambda x = 0 \end{cases} \xrightarrow{\chi = 1} \begin{cases} x = 1 \\ y = 0 \end{cases} \xrightarrow{\chi = 1} \begin{cases} x = 0 \\ y = 0 \end{cases} \xrightarrow{\chi = 1} \begin{cases} x = 0 \end{cases} \xrightarrow{\chi = 1} \end{cases} \xrightarrow{\chi = 1} \begin{cases} x = 0 \end{cases} \xrightarrow{\chi = 1} \begin{cases} x = 0 \end{cases} \xrightarrow{\chi = 1} \end{cases} \xrightarrow{\chi = 1} \begin{cases} x = 0 \end{cases} \xrightarrow{\chi = 1} \begin{cases} x = 0 \end{cases} \xrightarrow{\chi = 1} \end{cases} \xrightarrow{\chi = 1} \begin{cases} x = 0 \end{cases} \xrightarrow{\chi = 1} \end{cases} \xrightarrow{\chi = 1} \begin{cases} x = 0 \end{cases} \xrightarrow{\chi = 1} \end{cases} \xrightarrow{\chi = 1} \begin{cases} x = 0 \end{cases} \xrightarrow{\chi = 1} \end{cases} \xrightarrow{\chi = 1} \end{cases} \xrightarrow{\chi = 1} \begin{cases} x = 0 \end{cases} \xrightarrow{\chi = 1} \end{cases} \xrightarrow$$

## Problema 2)

1(x,g)=x2.4x+y2-6y L(x,y, 1, 12)=x2-4x+y2-6y+11(x+y-3)+12(-2x+y-2)

1) 
$$\frac{dL}{dx} = 2x - 9 + \lambda_1 - 2\lambda_2 = 0 \rightarrow 0$$

$$\frac{dL}{dy} = 2y - 6 + \lambda_1 + \lambda = 0 \rightarrow 0$$

$$3)\lambda_1\geq 0,\lambda_2\geq 0$$

## line, condidates

$$f(x,y) \rightarrow f(1/2) = 1^2 - 4\cdot(2) + 2^2 - 6\cdot(2)$$

$$= 1 - 8 + 4 - 12 = -15$$

$$2x+\lambda_1=9 \rightarrow x=(9-\lambda_1)/2=1$$
  $0.1+z=3$   $2)\sqrt{-3}$  lunt robbid  $0.2\cdot(1)+2=0$ 

$$0 \rightarrow 2x - 2\lambda_2 = 4 \rightarrow X = (4 + 2\lambda_2)/2 \rightarrow x = 4/5$$