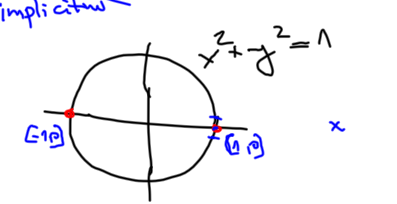


$f(x,y) = x \cdot y$  i  $g(x,y) = \frac{x}{y}$   $F(2,1) = [2,2]$   
 $\rightarrow [2,2]$ :  $F = (f, g)$   
 $D^1 F(x,y) = \begin{pmatrix} \frac{\partial f}{\partial x} & \frac{\partial f}{\partial y} \\ \frac{\partial g}{\partial x} & \frac{\partial g}{\partial y} \end{pmatrix} = \begin{pmatrix} y & x \\ \frac{1}{y} & -\frac{x}{y^2} \end{pmatrix}$   
 $F(x,y)$  je prosti i deli bodovi  $[x^*, y^*] \Leftrightarrow$   
 $\begin{pmatrix} x^* & -\frac{x^*}{y^*} \end{pmatrix}$  je invertibilni (regulirni)  $\Leftrightarrow$   
 $\Leftrightarrow \begin{vmatrix} x^* & -\frac{x^*}{y^*} \\ -\frac{1}{y^*} & \frac{x^*}{y^{*2}} \end{vmatrix} \neq 0 \Leftrightarrow -\frac{x^*}{y^*} - \frac{x^*}{y^*} \neq 0$   
 $\Rightarrow x^* \neq 0$  Spec.  $D^1 F(2,1) = \begin{pmatrix} 1 & 2 \\ 1/2 & -2 \end{pmatrix}$   
 $\det D^1 F(2,1) = -4 \neq 0 \Rightarrow$  prosti!

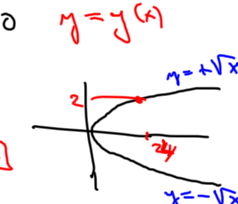
10 13-15:09

$D^1 F^{-1}(2,2) = [D^1 F(2,1)]^{-1} =$   
 $= \begin{pmatrix} 1 & 2 \\ 1/2 & -2 \end{pmatrix}^{-1} = \frac{1}{-4} \begin{pmatrix} -2 & -2 \\ -1 & 1 \end{pmatrix} = \begin{pmatrix} 1/2 & 1/2 \\ 1/4 & -1/4 \end{pmatrix}$   
 $F^{-1} = \frac{1}{\det A} \cdot A^*$   
*adjungovani*

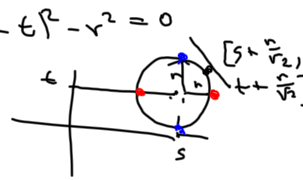
10 13-15:52

*implicitni*  
 $x^2 + y^2 = 1$   
  
 $y = x^2$   
 $y' = 2x$   
 $y = 0 \Rightarrow x = 0$   
 $y = \sqrt{x}$   
 v delu 0 ne postoji inverzni funkcije

10 13-15:45

$y^2 = x$   $F(x,y) = 0$   
 $-x'' + y^2 = 0$   $y = y(x)$   
 $2y y'(x) = 1$   
 projekcija:  $y(x) = \frac{1}{2y(x)}$   
 $y'(4) = \frac{1}{4}$  [4,2]  
 $y = \sqrt{x}$   $y' = \frac{1}{2\sqrt{x}}$   
 $y'(4) = \frac{1}{4}$   


10 13-16:01

$F(x,y) = (x-s)^2 + (y-t)^2 - r^2 = 0$   
  
 $y = y(x)$  nebo  $x = x(y)$   
 $F'_x(x,y) = 2(x-s) + 2(y-t) \cdot y' = 0$   
 $y' = -\frac{x-s}{y-t}$   
 $F'_y(x,y) = 2(x-s) \cdot x' + 2(y-t) = 0$   
 $x' = -\frac{y-t}{x-s}$

10 13-16:11