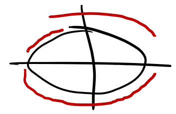
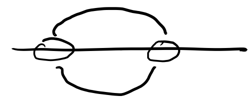
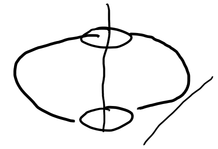
$$x^2 + y^2 = 1$$





$$y = \pm\sqrt{1-x^2}$$



$$x = \pm\sqrt{1-y^2}$$

$$f(x,y) = x^2 + y^2 - 1 \quad - \quad x^{2/3}\, y$$

$$x^2 + y^2 - 1 - x^{2/3} y = 0$$

$y(x)$

$$x^2 + (y(x))^2 - x^{2/3} \cdot y(x) = 0$$

deo podle x $\quad (\sin x)^2 = y(x)$

$$2x + 2y(x) \cdot y'(x) - \left(\frac{2}{3} x^{-1/3} y(x) + x^{2/3} y'(x) \right) = 0$$

$$y'(x) \cdot \left[2y(x) - x^{2/3} \right] = -2x + \frac{2}{3} x^{-1/3} \cdot y(x)$$

$$y'(x) = -\frac{2x - \frac{2}{3} x^{-1/3} y(x)}{2y(x) - x^{2/3}}$$

$$y'(1) = -\frac{2 - \frac{2}{3} \cdot 1 \cdot 1}{2 \cdot 1 - 1}$$

$$= -\frac{4/3}{1} = -\frac{4}{3}$$

$$y'(1) = -\frac{\frac{\partial F}{\partial x}(1,1)}{\frac{\partial F}{\partial y}(1,1)}$$

$x^2+y^2-1-x^{2/3}y = F(x,y)$ $\quad [1,1]$

$F(1,1) = 0$ $\quad 1+1-1-1=0$ ✓

F je C^1

$\frac{\partial F}{\partial y} \neq 0$ v $[1,1]$

$\frac{\partial F}{\partial y} = 2y - x^{2/3}$

v $[1,1]$ $\quad 2-1 = \underline{1} \neq 0$

$\frac{\partial F}{\partial x} = 2x - \frac{2}{3}x^{-1/3}y$ v $[1,1]$ $\quad 2-\frac{2}{3} = \frac{4}{3}$

$y'(1) = -\frac{4/3}{1} = -\frac{4}{3}$