

$$\frac{y^2 \sin^2 x}{x^4 + y^4} \quad (x,y) \rightarrow (0,0) \rightarrow \frac{0}{0}$$

$$x=0 : \frac{y^2 \cdot 0}{y^4} = \frac{0}{y^4} = 0 \quad (x,y) \rightarrow (0,0) \rightarrow 0 \quad \frac{\sin x}{x} \xrightarrow{x \rightarrow 0} \frac{\cos x}{1}$$

$$y=0 \quad \frac{0}{x^4} \xrightarrow{x \rightarrow 0} 0, \text{ for same reasons} \quad \frac{x \rightarrow 0}{x} \rightarrow 1$$

$$y=x \quad \frac{x^2 \sin^2 x}{2x^4} = \frac{x^2}{2x^2} \cdot \frac{\sin^2 x}{x^2} \xrightarrow{x \rightarrow 0} \frac{1}{2}$$

~~A.~~



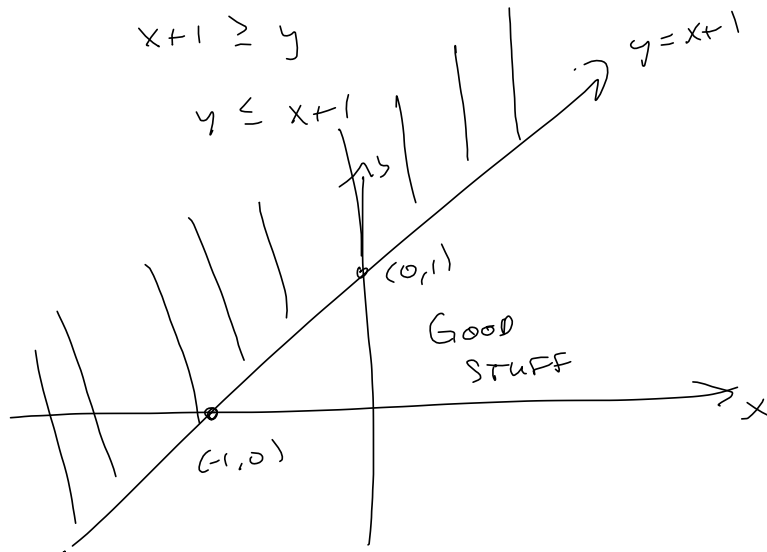
29

$$f(x,y) = \cos \sqrt{1+x-y}$$

Need $1+x-y \geq 0$

$$x+1 \geq y$$

$$y \leq x+1$$



$$\{(x,y) \mid y \leq x+1\}$$