

$$(x+y^2) - 2xy \frac{dy}{dx} = 0$$

$$M = x + y^2 \quad N = -2xy$$

$$\frac{\partial M}{\partial y} = 2y \quad \frac{\partial N}{\partial x} = -2y \quad \text{No ES EXACTA.}$$

$$\mu \frac{\partial M}{\partial y} + M \frac{\partial \mu}{\partial y} = \mu \frac{\partial N}{\partial x} + N \frac{\partial \mu}{\partial x}$$

$$\mu(x) \quad \frac{d\mu}{\mu} = \left( \frac{\frac{\partial M}{\partial y} - \frac{\partial N}{\partial x}}{M} \right) dx$$

$$\frac{d\mu}{\mu} = \left( \frac{2y - (-2y)}{-2xy} \right) dx$$

$$\frac{d\mu}{\mu} = \frac{4y}{-2xy} dx$$

$$\frac{d\mu}{\mu} = -2 \frac{dx}{x}$$

$$\int \frac{d\mu}{\mu} = -2 \int \frac{dx}{x}$$

$$\ln \mu = -2 \ln x$$

$$\ln \mu = \ln \frac{1}{x^2}$$

$$\mu = \frac{1}{x^2}$$

$$\mu M = \mu M$$

$$\mu M = \frac{1}{x^2} (x + y^2) \Rightarrow \frac{1}{x} + \frac{y^2}{x^2}$$

$$\mu N = \mu N$$

$$\mu N = \frac{1}{x^2} (-2xy) \Rightarrow -2 \frac{y}{x}$$

$$\frac{\partial \mu M}{\partial y} = +2 \frac{y}{x^2} \quad \frac{\partial \mu N}{\partial x} = 2y x^{-2}$$

$$= 2 \frac{y}{x^2} \quad \text{EXACTA.}$$