

## *Partial Derivatives*

$$z = f(x, y)$$

$$\frac{\partial f}{\partial y} \Rightarrow (\text{The Partial Derivative Of : } f(x, y) \text{ with Respect To : } x)$$

$$\frac{\partial f}{\partial x} = \frac{\partial}{\partial x}(x^2y + y^2 + x^2)$$

$$= \frac{\partial}{\partial x}(x^2y) + \frac{\partial}{\partial x}(y^2) + \frac{\partial}{\partial x}(x^2)$$

$$= 2xy + 0 + 2x = 2xy + 2x = 2x(y + 1)$$

$$f(x, y) = xy + \sin(x + y) - e^{xy}$$

$$\frac{\partial}{\partial y} \Big|_{(0, \frac{\pi}{2})} =$$