

Notation of partial derivatives

given a multivariate function $F(x, y)$

Its partial derivatives are

$$\frac{\partial}{\partial x} F(x, y) \text{ or } f_x(x, y)$$

$$\frac{\partial}{\partial y} F(x, y) \text{ or } f_y(x, y)$$

On higher derivatives

$$\frac{\partial^2}{\partial x^2} F(x, y) \text{ or } f_{xx}(x, y)$$

$$\frac{\partial^2}{\partial y^2} F(x, y) \text{ or } f_{yy}(x, y)$$

$$\frac{\partial^2}{\partial x \partial y} F(x, y) \text{ or } f_{xy}(x, y)$$

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