1 | **Basic Summary**

Partial derivatives are in many ways the same thing as a regular derivative, but for multivariate functions. The partial derivative of a function f with respect to an argument x is denoted by $\frac{\partial f}{\partial x}$. One holds each of the other variables (those not in the derivative) constant in the function and takes the derivative in a regular fashion. Partial derivatives describe how much an infinitesmal change in one variable influences the overall change of the function. As a result, these are very useful in fields like machine learning and science.

EXAMPLE

$f(x, y) = e^{2y} \sin x$ To find $\frac{\partial f}{\partial x}$ one would hold y constant and proceed as normal. $\frac{\partial f}{\partial x} f(x, y) = e^{2y} \cos x$