

Partial Derivatives Worksheet. Please write your final answers neatly so that they can be checked for correctness. This is a test to confirm your mathematical ability to do partial derivatives. For each of the following functions, find the following partial derivatives:

$$\frac{\partial f}{\partial x}, \frac{\partial^2 f}{\partial x^2}, \frac{\partial^2 f}{\partial x \partial t}, \frac{\partial f}{\partial t}, \frac{\partial^2 f}{\partial t^2}$$

a and b are constants. $f(x, t) = ax + bt$

A, k, ω , φ are constants. $f(x, t) = A \cos(kx - \omega t + \varphi)$

A, k, ω , φ are constants. $f(x, t) = A \cos^2(kx - \omega t + \varphi)$

A, k, ω , φ are constants. $i = \sqrt{-1}$ which is also a constant. $f(x, t) = Ae^{i(kx - \omega t)}$