

MATH 2E Prep: Partial derivatives

Facts to Know:

1. Rules for finding partial derivatives of $u = f(x, y, z)$

- Notation: $f_x(x, y, z) =$
- To find f_x , regard _____ as constants and differentiate $f(x, y, z)$ with respect to _____.
- To find f_y , regard _____ as constants and differentiate $f(x, y, z)$ with respect to _____.
- Similar for f_z .

2. Definition of gradient:

- $f(x, y, z)$ function of 3 variables, $\nabla f =$

Examples:

1. Calculate the gradient of the function $f(x, y, z) = x + ye^z$, and its value at two points $(1, 0, 2)$ and $(1, 1, 0)$.