Lecture 8: Partial derivatives

Math 195 Section 91

Wednesday July 8, 2009

goal: partial derivatives (covering section 15.3, 15.4)

1 return midterm

discuss some common mistakes; discuss the curve

2 reminder about limits

3 define continuity

4 partial derivatives

definition

notation

example: $f(x, y) =$ a polynomial.

geometry: slopes of tangent lines

higher partials

commutativity of higher partials: true when the higher partials are continuous.

5 differentiability

tangent plane

if partials exist and are continuous, then differentiable

example: $xy/(x^2 + y^2)$. consider the approach along the x and y axis.