

Calc 3 - Assignment 15

Note Title

10/12/2011

① If $f(x,y) = \sqrt{4-x^2-4y^2}$, find $f_x(1,0)$ and $f_y(1,0)$ and interpret as slopes.

② Verify that $u_{xy} = u_{yx}$ for $u(x,y) = x \sin(x+2y)$

③ How many n -th order partial derivatives does a function $f(x,y)$ have?

④ Find equation of the tangent plane to the given surface at the specified point:

a) $z = y \ln(x)$ at $(1,4,0)$

b) $z = \sqrt{xy}$ at $(1,1,1)$

⑤ Graph the surface and its tangent plane at the given point using Mathematica

$z = x^2 + xy + 3y^2$ at $(1,1,5)$