"QUIZ" for Lecture 7

NAME: (print!) Niharika Kompella **Section:** 23

E-MAIL SCANNED .pdf OF COMPLETED QUIZ to DrZcalc3@gmail.com (Attachment: q7FirstLast.pdf) ASAP BUT NO LATER THAN Sept. 28, 8:00pm

1. Compute the partial derivatives with respect to x and y.

$$z = \ln(x^2 + y^3) \quad .$$

W/respect to:

x

$z = \ln(x^2+y^3) =$

$\frac{1}{x^2+y^3} \cdot \frac{\partial}{\partial x}(\ln(x^2+y$

$\frac{1}{x^2+y^3} \cdot 2x + 0$

$z' = \frac{2x}{x^2+y^3}$

y

$z = \ln(x^2+y^3) =$

$\frac{1}{x^2+y^3} \cdot \frac{\partial}{\partial y}(\ln(x^2+y^3))$

$\frac{1}{x^2+y^3} \cdot 3y + 0$

$z' = \frac{3x}{x^2+y^3}$

2. Find an equation of the tangent plane to the ~~given surface at the~~ specified point.

ß $z = x^2 + y^2 + 2 \quad , \quad (1,1,4) \quad .$

$f(x,y) = x^2+y^2+2$

$f_x = 2x \rightarrow f(1) = 2$

$f_y = 2y \rightarrow f(1) = 2$

$z - z_0 \quad f_x(x_1 \cdot (x-x_0) + f_y(x,y) \cdot (y-y_0) =$

$= 2 \cdot (x-1) + 2(y-1) = z$

$2x - 2 + 2y - 2 = z$

$2x + 2y - z - 2 = 0$