"QUIZ" for Lecture 7

NAME: (print!) Angelica Armstrong **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.

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

$f_x = 1/x^2+y^3 \cdot 2x \qquad f_y = 1/x^2+y^3 \cdot 3y^2$

$$f_x = \frac{2x}{x^2+y^3} \qquad f_y = \frac{3y^2}{x^2+y^3}$$

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

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

$4 = 1+1+2\checkmark$ $f_x = \frac{dz}{dx} = 2x+0+0$ $f_y = \frac{dz}{dy} = 0+2y+0$

$z' = 2$ $z' = 2$

line tangent $\rightarrow z - 4 = 2(x-1) + 2(y-1)$

$z - 4 = 2x - 2 + 2y - 2$

$z = 2x + 2y - 4 + 4$

$z = 2x + 2y$