"QUIZ" for Lecture 7

NAME: (print!) Yeram Sarah Jung **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.

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

$\frac{df}{dx} = \frac{2x}{x^2+y^3}$ $\frac{df}{dy} = \frac{3y^2}{x^2+y^3}$

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

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

$4 = 1^2 + 1^2 + 2$ ✓ point lies on surface

$f_x = \frac{d}{dx}(x^2+y^2+2) = 2x$ $f_x(1,1,4) = 2(1) = 2$

$f_y = \frac{d}{dy}(x^2+y^2+2) = 2y$ $f_y(1,1,4) = 2(1) = 2$

$z - 4 = 2(x-1) + 2(y-1)$

$\boxed{z = 2x + 2y}$