

"QUIZ" for Lecture 7

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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  $y$ .

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

$$\frac{\partial z}{\partial x} = \frac{1}{x^2 + y^3} (2x) \quad \frac{\partial z}{\partial y} = \frac{3y^2}{x^2 + y^3}$$

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

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

w.r.t  $\boxed{x}$   $z' = 2x @ (1, 1, 4) \quad z' = 2$

w.r.t  $\boxed{y}$   $z' = 2y @ (1, 1, 4) \quad z' = 2$

$$\boxed{z = 2(x-1) + 2(y-1) + 4}$$