

“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 .

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

$$\begin{aligned} f/x &= (1/x^2 + y^3)^{-1} \cdot 2x \\ f/y &= (1/x^2 + y^3)^{-1} \cdot 3y^2 \end{aligned}$$

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

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

$$\begin{aligned} f/x &= 2x \\ f/y &= 2y \\ f_x(1, 1) &= 2 \cdot 1 = 2 \\ f_y(1, 1) &= 2 \cdot 1 = 2 \\ z - 4 &= 2(x - 1) + 2(y - 1) \\ z &= 2x + 2y \end{aligned}$$