**"QUIZ" for Lecture 7**

**NAME:** (print!) Matthew Sternesky **Section:** _____

**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 $y$.

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

$f_x(x,y) = \frac{2x}{x^2+y^3}$

$f_y(x,y) = \frac{3y}{x^2+y^3}$

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

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

$z_0 = f(x,y) = 1^2 + 1^2 + 2 = 4$

$f_x(x,y) = 2x + y^2 = 3$

$f_y(x,y) = x^2 + 2y = 3$

$z - 4 = 3(x-1) + 3(y-1)$

$z = 3x + 3y - 10$