"QUIZ" for Lecture 20

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E-MAIL SCANNED .pdf OF COMPLETED QUIZ to DrZcalc3@gmail.com (Attachment: q20FirstLast.pdf) ASAP BUT NO LATER THAN Nov. 16, 8:00pm

1. Find an equation for the tangent plane to the parametric surface

$$x = v^2 \quad , \quad y = u + v \quad , \quad z = u^2 \quad ,$$

at the point $(1, 2, 1)$. Simplify as much as you can!

use maple to solve for u and v → u=1 v=1 $r = v^2 i + (u+v) j + u^2 k$

$r_u = 0i + 1j + 2uk \rightarrow 0i + 1j + 2k$

$r_v = 2vi + 1j + 0k \rightarrow 2i + 1j + 0k$

$$\begin{vmatrix} 0 & 1 & 2 \\ 2 & 1 & 0 \end{vmatrix}$$

$= -2i - (-4)j + -2k = -2i + 4j - 2k$

equation $= -2(x-1) + 4(y-2) - 2(z-1) = 0$

$-2x + 2 + 4y - 8 - 2z + 2 = 0 \rightarrow -x + 2y - z = 2$

2. Evaluate the surface integral

$$\int\int_S z \, dS \quad ,$$

where S is the triangular region with vertices $(2, 0, 0), (0, 2, 0), (0, 0, 2)$.

IDK