

KING FAHD UNIVERSITY OF PETROLEUM AND MINERALS
DEPARTMENT OF MATHEMATICS & STATISTICS
MATH 201-02
Quiz # 3
Dec1, 2010

NAME:	ID#:
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SHOW ALL YOUR WORK

1. **(4pts)** Find the direction of the tangent line to the ellipsoid $4x^2 + 2y^2 + z^2 = 6$ which is drawn at the point $(1, 2, -2)$ parallel to the yz -plane.

2. **(3pts)** Show that $\lim_{(x,y,z) \rightarrow (0,0,0)} \frac{xy+yz+xz^2}{x^2+y^2+z^4}$ does not exist.

3. **(3pts)** Sketch the graph of the function $f(x, y) = \sqrt{x^2 + y^2}$ and its level curve $f(x, y) = 1$.