

**“QUIZ” for Sept. 28, 2009**

**NAME:** (print!) \_\_\_\_\_ **Section:** \_\_\_\_\_

**E-MAIL ADDRESS:** (print!) \_\_\_\_\_

**1.** Find the directional derivative of the function  $f(x, y, z) = xy^2z^3$  at the point  $(2, 1, 1)$  in the direction  $\langle 2, -1, -1 \rangle$ .

**2.** Find the maximum rate of change of  $f(x, y) = x^2 + y^3$  at the point  $(2, 1)$  and the direction in which it occurs.