

“QUIZ” for Nov. 9, 2009

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

E-MAIL ADDRESS: (print!) _____

1.

Determine whether or not the vector field

$$F(x, y, z) = y^2 z^3 \mathbf{i} + 2xyz^3 \mathbf{j} + 3xy^2 z^2 \mathbf{k}$$

is conservative. If it is conservative, find a function f such that $\mathbf{F} = \nabla f$.

2. Show that the line integral

$$\int_C 2xy^2 dx + 2x^2y dy \quad ,$$

is independent of the path C , and evaluate it if C is *any* path from $(1, 0)$ to $(0, 1)$.