

**“QUIZ” for Lecture 19**

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

**E-MAIL SCANNED .pdf OF COMPLETED QUIZ to DrZcalc3@gmail.com (Attachment: q19FirstLast.pdf) ASAP BUT NO LATER THAN Nov. 12, 8:00pm**

**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  $(0, 1)$ .