

"QUIZ" for Lecture 24

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E-MAIL SCANNED .pdf OF COMPLETED QUIZ to DrZcalc3@gmail.com (Attachment: q24FirstLast.pdf) ASAP BUT NO LATER THAN Dec. 4, 2020, 8:00pm

By using Stokes' Theorem, or otherwise, evaluate  $\int_C \mathbf{F} \cdot d\mathbf{r}$ , where

$$F(x, y, z) = (yz + 2y + 3z)\mathbf{i} + (xz + 2x + 4z)\mathbf{j} + (xy + 3x + 4y)\mathbf{k} ,$$

where  $C$  is the curve of intersection of the plane  $x + y + z = 1$  and the cylinder  $x^2 + y^2 = 1$ , oriented counterclockwise as viewed from above. Be sure to explain everything.

$$\text{curl}(F) = \langle 0, 0, 0 \rangle$$

$$\iint_S \langle 0, 0, 0 \rangle ds = \boxed{0}$$