

"QUIZ" for Lecture 24

NAME: (print!) AAYUSHI KASERA Section: _____

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.

$$z = 1 - x - y$$

$$g(x, y) = 1 - x - y$$

$$g_x = -1$$

$$g_y = -1$$

$$x = 0 \dots 1$$

$$\theta = 0 \dots 2\pi$$

Curl is 0

\therefore Ans = 0