

Full name: _____ GT ID: _____ Sec: _____

Quiz 10 Version B

You have 15 minutes to take the quiz. No phones, notes, or use aids of any kind is permitted.

1. (4 points) [**Conservative Vector Fields**] *True or False.*

- (a) The vector field $\mathbf{F} = \langle y + z, z, x + y \rangle$ is conservative. [A]
 TRUE **FALSE**

- (b) Find a potential function for $\mathbf{F} = \langle 2x, -y^2, \frac{-4}{1+z^2} \rangle$. [AN]

2. (6 points) [**FToLI**]Evaluate the line integral $\int_C \mathbf{F} \cdot T \, ds$ using FToLI. [AJN]

$$\mathbf{F} = \left\langle \frac{1}{y}, \frac{1}{z} - \frac{x}{y^2}, \frac{-y}{z^2} \right\rangle,$$

$$C : \mathbf{r}(t) = \langle 1, 1, 1 \rangle + t\langle 1, 1, 1 \rangle, \quad t \in [0, 1].$$