

You must show **all** work to receive full credit. All work is to be your own.

09/28/2020

This is a closed books and notes test. Be organized. Total points: **20**

19:44- 19:57

1. §10.1 Line Integral. Work done by a force. Evaluate the line integral, where C is the given curve.
(Show the details.) 10 points

$$\int_C (y + z)dx + (x + z)dy + (x + y)dz, \quad C \text{ is the line segment from } (1, 0, 1) \text{ to } (0, 1, 2)$$

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2. §10.2 Show that the field $\mathbf{F}(x, y, z) = yze^{xz} \mathbf{i} + e^{xz} \mathbf{j} + xye^{xz} \mathbf{k}$ is conservative and evaluate the integral $\int_C \mathbf{F} \cdot d\mathbf{r}$ along $C : \mathbf{r}(t) = (t^2 + 1) \mathbf{i} + (t^2 - 1) \mathbf{j} + (t^2 - 2t) \mathbf{k}$, $0 \leq t \leq 2$. Show the details of your work. 10 points