

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. Calculate $\int_C \mathbf{F}(\mathbf{r}) \cdot d\mathbf{r}$ for the following data. If \mathbf{F} is a force, this gives the work done in the displacement along C . (Show the details.)
 $\mathbf{F} = [x + y, y + z, z + x]$, $C : \mathbf{r} = [2t, 5t, t]$ from $t = -1$ to 1 . 10 points

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2. §10.2 Check for **Path Independence** and, if independent, integrate from $(0, 0, 0)$ to (a, b, c) .
(Show the details of your work.)

10 points

$$(\cos(x^2 + 2y^2 + z^2))(2x dx + 4y dy + 2z dz)$$