

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.)
- $\mathbf{F} = [x, -z, 2y]$ , , from  $(1, 2, 3)$  straight to  $(3, 2, 1)$ . 10 points

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2. §10.2 Show that the form under the integral sign is exact in space and evaluate the integral. Show the details of your work. 10 points

$$\int_{(0,0,\pi)}^{(2,\frac{1}{2},\frac{\pi}{2})} e^{xy}(y \sin z dx + x \sin z dy + \cos z dz)$$