| Fall 2020 | ENG 5300 | Quiz 1 | Yanjun Yao |
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| 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. $\S 10.1$ 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.)
$\mathbf{F}=\left[e^{-x}, e^{-y}, e^{-z}\right], C: \mathbf{r}=\left[t, t^{2}, t\right]$ from $(0,0,0)$ to $(2,4,2)$.
2. $\S 10.2$ Show the form under the integral sign is exact in space and evaluate the integral. Show the details of your work.

$$
\int_{(5,3, \pi)}^{(3, \pi, 3)}(\cos y z d x-x z \sin y z d y-x y \sin y z d z)
$$

