Name:
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MAC 2313.8326
Cyr

Quiz 10
You must show all work to receive full credit!!

Problem 1. (3 pts) Determine whether the vector field $\mathbf{F} = \langle yze^{xy}, xze^{xy} - z, e^{xy} - y \rangle$ is conservative.

Problem 2. (3 pts) Compute $\displaystyle\int_{\mathcal{C}} f\,ds$ where $f(x, y, z) = x + z$ and $\mathcal{C}$ has parametrization $\mathbf{r}(t) = (2t^2, \frac{8}{3}t^{3/2}, 2t)$ for $0 \le t \le 2$.

Problem 3. (4 pts) Compute $\displaystyle\int_{\mathcal{C}} \mathbf{F}\,d\mathbf{r}$ where $\mathbf{F} = \langle x, 3y \rangle$ and $\mathcal{C}$ is the part of the circle $x^2 + y^2 = 9$ with $x \le 0, y \ge 0$ oriented clockwise.