Name:
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MAC 2313.8326
Cyr

Quiz 12
You must show all work to receive full credit!!

Problem 1. (5 pts) Use Green's Theorem to evaluate $\oint_{\mathcal{C}} xy^2 dy$, where $\mathcal{C}$ is the unit circle centered at the origin, oriented counterclockwise.

Problem 2. (3 pts) Let $\mathcal{C}$ be a simple, closed curve enclosing a region D such that the conditions of Green's Theorem are satisfied. Justify or disprove the claim that the area of D can be calculated by evaluating $\oint_{\mathcal{C}} (y \tan^2 x) dx + (\tan x + e^{y^3}) dy$.

Problem 3. (2 pts) Is the following statement true or false? Every conservative vector field is irrotational.