

1. (5pts) Use Green's Theorem to evaluate

$$\int_C x^2 y dx - xy^2 dy$$

where C is the circle $x^2 + y^2 = 4$ with counterclockwise orientation.

2. (5pts) Evaluate the line integral $\int_C x^3 z ds$ where $C : x = 2 \sin t, y = t, z = 2 \cos t, 0 \leq t \leq \pi/2$.