

Score: ____ out of 20 points

This quiz is due at the beginning of class on Friday, 22 April. The work you hand in must be your own. Show all your work.

(5) 1. Let C be the curve with parametrization $\alpha(t) = (t^3, t^2)$, $0 \leq t \leq 2$. Evaluate $\int_C ydx + x^2dy$.

(5) 2. Evaluate $\int_C ydx + zdy + xydz$, where C is the line segment from $(0, 0, 1)$ to $(1, 2, 0)$.

- (5) 3. Evaluate (without using Green's theorem) $\int_C x^2 y dx + xy dy$, where C is the triangle in \mathbb{R}^2 with vertices at $(0, 0)$, $(2, 2)$, and $(0, 2)$, oriented counterclockwise.

- (5) 4. Let $R = \{(x, y) : -2 \leq x \leq 2, 1 \leq y \leq 2\}$. Use Green's theorem to evaluate $\int_C xy^2 dx + x^2 y dy$.