
Math 2130 - Homework # 8

Line Integrals

1. Compute $\int_C y ds$ where C is given by $x = t^2$, $y = t$, $0 \leq t \leq 2$.
2. Compute $\int_C (x^2 + y^2) ds$ where C is the circle of radius 4 centered at the origin.
3. Compute $\int_C xy^4 ds$ where C is the right half of the circle $x^2 + y^2 = 16$ moving in a counter-clockwise direction.
4. Compute $\int_C (2x - y) ds$ where C is the line segment from $(1, 0)$ to $(3, 2)$.
5. Compute $\int_C xe^{yz} ds$ where C is the line segment from $(0, 0, 0)$ to $(1, 2, 3)$.