

MATH 251 – QUIZ 9

Question 1: (5 points)

Find the work done by the force field $\mathbf{F}(x, y) = \langle xy, -y^2 \rangle$ on a particle that moves around the circle $C : x^2 + y^2 = 9$ from $(0, -3)$ to $(0, 3)$ in the counterclockwise direction.

Question 2: (5 points)

Calculate $\int_C F \cdot dr$, where $F(x, y) = \langle ye^x + 2x, e^x + 3y^2 \rangle$ and C is the following curve

$$\begin{cases} x(t) = t \\ y(t) = t^2 \\ 1 \leq t \leq 2 \end{cases}$$