

1. Evaluate $\int_C \vec{F} \cdot d\vec{r}$, where $\vec{F}(x, y) = \langle -3y, 5x \rangle$ and C is the circle $x^2 + y^2 = 25$ taken in the counterclockwise direction.

2. Evaluate $\int_C \vec{F} \cdot d\vec{r}$, where $\vec{F}(x, y) = \langle 6x^2 - y^2, -2xy + 1 \rangle$ and C is the curve $\vec{r}(t) = \langle t, 3t^2 \rangle$ with $0 \leq t \leq 1$.