

Let $F(x, y) = \langle y - 3, x + 2y \rangle$. For each path \mathcal{C} , first determine if $\int_{\mathcal{C}} F(x, y) \cdot dr$ is positive or negative and then calculate $\int_{\mathcal{C}} F(x, y) \cdot dr$

1. \mathcal{C} is the portion of the polar rose $r = 2 \cos(2\theta)$ with $0 \leq \theta \leq \frac{\pi}{2}$
2. \mathcal{C} is the portion of the polar rose $r = 2 \cos(2\theta)$ with $0 \leq \theta \leq 2\pi$

