

Evaluate

1. $\oint_C (y + e^{\sqrt{x}})dx + (2x + \cos y^2)dy$ where C is the boundary of the region enclosed by the parabolas $y = x^2$ and $x = y^2$ oriented counterclockwise.

2. $\oint xy^2 dx + xdy$ where C is the unit circle oriented counterclockwise.