1.) \((5 \text{pts})\) Evaluate \(\int_C (x+y) \, dx + y \, dy\), where \(C\) is the triangle with vertices \((-1, 0), (-1, 1), (1, 1)\), oriented in the counterclockwise direction.

2.) \((5 \text{pts})\) Show that \(F(x, y) = (xy + \cos y)\mathbf{i} + (\frac{1}{2}x^2 - x \sin y)\mathbf{j}\) is a conservative field and find its potential. Then, evaluate \(\int_{(0,0)}^{(1,2)} F \cdot dr\).
1. (5pts) Evaluate \( \int_C (x + y) \, dx + y \, dy \), where \( C \) is the curve given by \( x = 2 \cos t \) and \( y = 2 \sin t \) for \( 0 \leq t \leq \pi \).

2. (5pts) Show that \( \int_C (x^2 + y^1) \, dx + \left( \frac{1}{3} x^3 + y^2 \right) \, dy \) is independent of path. Then, evaluate the integral along any path from \((0,0)\) to \((1,2)\).