

Quiz 3**You have 20 minutes****Name:****Banner#:**

1. Compute $\int_C F \cdot d\vec{x}$ where $F = (x^2 + y, 4x - y^2)$ and C is the positively oriented boundary curve of a region D that has area 4.
2. For each of the vector field F below, determine whether it is conservative or not. If it is, then find its potential $-f$ such that $\nabla f = F$. If not, then why not?
 - (a) $F = (x, \sin z, y \cos z)$;
 - (b) $F(x, y, z) = (y, \sin z, y \cos z)$