Math 301-101 Sec: 02 & 03 Quiz 2 (A)

Name:.....ID#:.....Sec:.....Ser:.....

Q.1: Evaluate the integral l $\int_C 2x^3ydx + (3x+y)\,dy$, where C is given by $x = y^2$ from $(1,-1)$ to $(1,1)$.

Q.2: Use Green's theorem to evaluate the integral $\oint_C -3xydx + 2xy^2dy$, where C is the triangle $(1,3)$, $(3,3)$, $(3,9)$.

Q.3: Show that the integral $\int_{(1,2)}^{(3,6)} (2y^2x - 3)\,dx + (2yx^2 + 4)\,dy$ is independent of path. Find the function $\phi(x, y)$ such that $d\phi = (2y^2x - 3)\,dx + (2yx^2 + 4)\,dy$. Use $\phi(x, y)$ to evaluate the integral.