MATH 261 Quiz 13 Name: .
Class time:

Show all work. 5 points each.

1) Find a function f such that $\nabla f = \mathbf{F}(x, y) = \langle y,\ x+2y \rangle$ and use it to evaluate $\int_C \mathbf{F}\, d\mathbf{r}$ where C is the upper semicircle that starts at (0, 1) and ends at (2, 1)

2)Use Green's Theorem to evaluate $\oint_C e^y dx + 2xe^y dy$ where C is the square with sides $x = 0$, $x = 1$, $y = 0$ and $y = 1$.