Math 53: Quiz #8 April 11 GSI: M. Lindsey 20 points, 20 minutes

Name:

Please give neat and organized answers. Whenever applicable (especially for computational questions), make it clear what strategy you are using. Points may be deducted for poor exposition.

Problem 1

(10 points.) Let C be the line segment from (0,0) to (1,2). Let $\mathbf{F}(x,y) = \langle 2x^2 e^{x^2y}, x^2 e^{x^2y} \rangle$. Compute

$$\int_C \mathbf{F} \cdot d\mathbf{r}$$

(See back for next problem!)

Problem 2

Part (a). Let C be the semicircle obtained by considering the $y \ge 0$ half of the unit circle, oriented from left to right in the xy-plane. Let $\mathbf{F}(x,y) = \langle 2xye^{x^2y}, x^2e^{x^2y} \rangle$. Compute

$$\int_C \mathbf{F} \cdot d\mathbf{r}.$$