# Math 53: Quiz \#8 

April 11
GSI: M. Lindsey
20 points, 20 minutes

Name: $\qquad$

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 $\mathbf{F}(x, y)=$ $\left\langle 2 x^{2} e^{x^{2} y}, x^{2} e^{x^{2} y}\right\rangle$. 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 $y \geq 0$ half of the unit circle, oriented from left to right in the $x y$-plane. Let $\mathbf{F}(x, y)=$ $\left\langle 2 x y e^{x^{2} y}, x^{2} e^{x^{2} y}\right\rangle$. Compute

$$
\int_{C} \mathbf{F} \cdot d \mathbf{r} .
$$

