Name	ID_

MATH 251 Quiz 4 Spring 2007

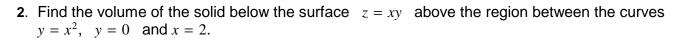
1-3	/15
4	/10
Total	/25

Sections 509

Multiple Choice: (5 points each)

P. Yasskin

- **1**. The point (1,2) is a critical point of $f(x,y) = (2x x^2)(4y y^2)$. Use the Second Derivative Test to classify (1,2) as one of the following:
 - a. Local Minimum
 - b. Local Maximum
 - c. Inflection Point
 - d. Saddle Point
 - e. Test Fails



- **a**. $\frac{64}{3}$
- **b**. $\frac{32}{3}$
- 3
- **c**. $\frac{16}{3}$
- **d**. $\frac{8}{3}$
- **e**. $\frac{4}{3}$

3. Reverse the order of integration in the integral $\int_0^4 \int_0^{\sqrt{y}} e^{x^3 + y^4} dx dy$

a.
$$\int_{0}^{2} \int_{x^{2}}^{4} e^{x^{3}+y^{4}} dy dx$$

b.
$$\int_{0}^{16} \int_{0}^{x^{2}} e^{x^{3}+y^{4}} dy dx$$

c.
$$\int_{0}^{2} \int_{x^{2}}^{4} e^{x^{4}+y^{3}} dy dx$$

d.
$$\int_{0}^{16} \int_{0}^{x^{2}} e^{x^{4}+y^{3}} dy dx$$

e. $\int_0^2 \int_0^{x^2} e^{x^3 + y^4} dy dx$

4. (10 points) Find the mass and *x*-component of the center of mass of the plate in the first quadrant bounded by y = 3 - x, the *x*-axis and the *y*-axis if the surface density is $\rho = y$.

Solve on the back of the Scantron.