Name_____ ID_____

1-3	/15
4	/10
Total	/25

MATH 253 Quiz 4 Spring 2007

Sections 501-503 P. Yasskin

Multiple Choice: (5 points each)

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 Maximum

b. Local Minimum

c. Inflection Point

d. Saddle Point

e. Test Fails

2. Find the volume of the solid below the surface $z = 2xy$ above the region between the curves $y = x^2$, $y = 0$ and $x = 2$.

a. $\frac{64}{3}$

b. $\frac{32}{3}$

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. $\int_0^{16} \int_0^{x^2} e^{x^4+y^3}\, dy\, dx$

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

c. $\int_0^{16} \int_0^{x^2} e^{x^3+y^4}\, dy\, dx$

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

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.