Math 116 **Test 5 (Quiz)** Satya Mandal
Fall 07 Maximum Points 50 March 16, 2007

1. Compute the double integral $\int\int_R (12xy^2 + 8y^3)dA \quad where \quad R = \{(x,y) : 0 \le x \le 1, \quad 0 \le y \le 4\}$

Answer:

2. Compute the double integral $\int\int_R x^3 y(1+y^2)^{1/2} dA \quad where \quad R = \{(x,y) : -2 \le x \le 2, \quad 0 \le y \le 4\}$.

Answer:

3. Compute the double integral $\int\int_R (x+y)dA \quad where \quad R = \{(x,y) : 0 \le x \le \sqrt{y}, \quad 0 \le y \le 4\}$.

Answer:

4. Compute the double integral $\int\int_R xe^{-y^2} dA \quad where \quad R = \{(x,y) : 0 \le x \le \sqrt{y}, \quad 0 \le y \le 4\}$

Answer:

5. Find the volume under the surface $z = f(x,y) = 2 - x^2 - y^2$ over the region $R = \{(x,y) | 0 \le x \le 1, \quad 0 \le y \le 1\}$.

Answer:volume=

6. Find the volume under the surface $z = f(x, y) = 4$ over the region $R = \{(x, y)|0 \leq y \leq 4 - x^2, \quad 0 \leq x \leq 2\}$.

ANSWER:volume=

7. Find the volume under the surface $z = f(x, y) = 2xe^y$ over the triangle $R = \{(x, y)|0 \leq y \leq x, \quad 0 \leq x \leq 2\}$.

ANSWER:volume=

8. Find the average value of the function $f(x, y) = xy$ over the triangle $R = \{(x, y)|0 \leq y \leq 2 - x, \quad 0 \leq x \leq 2\}$.

Answer:

9. Find the average value of the function $f(x, y) = xy$ over the rectangle $R = \{(x, y)| - 1 \leq y \leq 1, \quad -1 \leq x \leq 1\}$.

Answer:

10. The temperature x miles east and y miles north of the weather center is given by $T(x, y) = 60 + 2x - 4y$. Find the average temperature over the rectangular region $R = \{(x, y) : 0 \leq x \leq 5, -2 \leq y \leq 2\}$.

Answer: Average Temperature=