

MATH 261 EXAM 3, Fall 2005

Simplify all answers. Show your work!		Name:	Score	
1.	a) Find $\int \int_R (x \cos y) \, dydx$; $R = [0, 2] \times [0, \pi/2]$. Ans:_____.	b) Find $\int_0^1 \int_0^1 3xy^2 e^{x^2} \, dydx$. Ans:_____.	1	
			2	
			3	
			4	
			5	
			6	
2.	Evaluate the integral by first identifying it as a solid. Sketch the solid. a) $I = \int_0^5 \int_0^6 2 \, dydx$. Ans:_____.	b) $I = \int_0^3 \int_0^{\sqrt{9-x^2}} \int_0^4 \, dzdydx$. Ans:_____.	7	
			8	
			9	
			10	
			Tot	
3.	Let $I = \int_0^1 \int_{\sqrt{y}}^1 \cos(\pi + x^3) \, dx dy$. a) Reverse the order of integration. Ans:_____.	b) Compute the integral. Ans:_____.		
4.	Let $I = \int \int_D \tan^{-1}(y/x) \, dydx$, where D is the region $D = \{(x,y) 1 \leq x^2 + y^2 \leq 9, 0 \leq y \leq \sqrt{3}x\}$. a) Convert to polar coordinates. Ans:_____.	b) Evaluate the integral. Ans:_____.		
5.	The equation of a sphere in spherical coordinates is given by: $\rho = 4 \cos \phi$. a) Write the equation in Cartesian Coordinates. Ans:_____.	b) Find the center and radius. Ans:_____.		
Extra Space				

