

MATH 261 EXAM 2, Spring 2005

Simplify all answers. Show your work!		Name:	Score	
1.	Let $f(x, y) = \ln(36 - 9x^2 - 4y^2)$. a) Find $f(\sqrt{3}, -\sqrt{2})$. Ans: _____	b) Sketch the domain of f .	1	
			2	
			3	
			4	
			5	
			6	
			7	
2.	Describe the level surfaces for of the given functions for $k = 1$. a) $f(x, y, z) = x^2 - y^2 + z^2$. Ans: _____	b) $f(x, y, z) = x^2 - y^2 + z^2 + 1$.	8	
			9	
			10	
			Tot	
3.	Show that $\lim_{(x,y) \rightarrow (0,0)} \frac{x^3 - x^2y}{xy^2 + y^3}$ does not exist.			
4.	Let $f(s, t) = t \ln(s^2 + t^2)$. a) f_s . Ans: _____	b) f_t . Ans: _____		
5.	Let $u = e^{-x} \cos y - e^{-y} \cos x$ a) Find u_{xx} . Ans: _____	b) Determine if u is harmonic. Ans: _____		
Extra space				

