Math 2204 : Intro Multivariable Calculus			
	Sec.	Topic	Homework
Unit 1			
7 Lectures	12.1	Three-Dimensional Coordinate Systems	p. 790-791 # 6, 10, 13, 15, 31 (and sketch), 34 (and sketch), 38, 41
	12.2	Vectors	p. 798-800 # 5, 21, 26, 27, 29, 31, 34, 36, 40
	12.3	The Dot Product	p. 806-807 # 21, 24, 43, 49, 51, 52, 53
	12.4	The Cross Product	p. 814-816 # 8, 20, 32, 39, 41, 43, 45
	12.5	Equations of Lines and Planes	p. 824-826 # 13, 16, 27, 33, 48, 58, 70, 72
	12.6	Cylinders and Quadric Surfaces	p. 832-834 # 4, 5, 6, 9, 11, 12, 15-18, 21-28, 31, 33, 36, 41, 42
6 Lectures	14.1	Functions of Several Variables	p. 888-892 # 18, 25 (first octant), 29, 30, 31, 43, 46, 49, 59-61. And for each of the following find and sketch the domain and find the range. Say if the domain is open, closed, or neither. Is the domain bounded or unbounded? (a) $f(x,y) = \ln(9-x^2-9y^2)$, (b) $f(x,y) = \sqrt{x^2-y^2}$
	14.2	Limits and Continuity	p. 899-900 # 8, 9, 14, 17, 39, 41, (a) Evaluate the limits: (i) $\lim_{(x,y,z)\to(\pi,0,\pi)} \cos(ze^{-2y}\cos 2x)$. (ii) $\lim_{(x,y)\to(4,3)} \frac{\sqrt{x}-\sqrt{y+1}}{x-y-1}$ (b) Can you define $f(0,0) = c$ for some c that extends $f(x,y)$ to be continuous at $(0,0)$? If so, for what value of c? If not, explain why. (i) $f(x,y) = \frac{x^2-x^2y^2+y^2}{x^2+y^2}$. (ii) $f(x,y) = \frac{x^2+y^3}{xy}$. (iii) $f(x,y) = \frac{x^2+y}{y}$.
	14.3	Partial Derivatives	p. 911-915 # 5, 19, 22, 34, 43, 49, 58, 60, 71
	14.4	Tangent Planes and Linear Approximations	p. 922-924 # 2, 6, 16 (linearization only), 21, 32, 33, 37, 38
Unit 2			
5 Lectures	15.1	Double Integrals Over Rectangles	p. 981-982 # 5a, 12, 14, 16 (matlab)
	15.2	Iterated Integrals	p. 987-988 # 10, 17, 20, 23, 30
	15.3	Double Integrals over General Regions	p. 995-997 # 15, 16, 19, 31, 38, 44, 46, 52, 54, 59, 62
	15.4	Polar Coordinates	p. 1002-1003 # 6 (sketch only), 20, 22, 29, 31, 32, 39, Evaluate $\int_0^1 \int_0^y \frac{y^2}{(x^2+y^2)^{3/2}}\,dxdy$
	15.5	Applications of Double Integrals	p. 1012-1013 # 5, 10, 13, 16 (assume $\rho(x,y) = 1/\sqrt{x^2+y^2}$)
5 Lectures	15.7	Triple Integrals	p. 1025-1027 # 7, 16 (setup $dzdydx$ only), 17 (setup $dxdydz$ only), 18 (setup $dzdydx$ only), 19 (setup $dzdydx$ only), 27, 28, 31, 33, 34, 35, 47ab
	15.8	Cylindrical Coordinates	p. 1031-1032 # 2a, 4a, 11, 12, 17, 23, 24 (setup only), 27, 30
	15.9	Spherical Coordinates	p. 1037-1039 # 2a, 4a, 7, 8, 20 (spherical only), 21, 23, 29, 30, 39, 41 (setup only)
Unit 3			
7 Lectures	14.5	Chain Rule	p. 930-932 # 2, 13, 14, 16, 24, 30, 31. 35. 38, 39, 40
	14.6	Directional Derivatives and Gradients	p. 943-945 # 10, 13, 16, 19, 24, 27, 33, 35, 41, 46a, 50
	14.7	Optimization	p. 953-955 # 2, 6, 9, 10, 30, 32, 34, Find the absolute maximum and minimum values of $f(x,y) = 2x^2-4xy+3y^2-1$ on the line segment with endpoints $A = (-2,-1)$ and $B = (1,2)$
	14.8	Lagrange Multipliers	p. 963-964 # 4, 7, 8, 16, 20, 30, 37, 43
5 Lectures	13.1	Vector Functions and Space Curves	p. 845-847 # 1, 3, 9, 10, 11, 15, 18, 21, 22, 30, 42, 47, 48
	13.2	Derivatives and Integrals of Vector Functions	p. 852-853 # 3, 5, 17, 21, 25, 34, 36, 41
	13.3	Arc Length and Curvature	p. 860-862 # 2, 11, 15, 17, 21, 23, 27, 32, 48, 49
	13.4	Motion in Space	p. 870-871 # 3, 4, 5, 10, 15, 18a, 23, 25, 28, 38, 40