Course Content for Final Exam

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Functions and their Domain: Introduction, Functions of Two or More Variables, Domain and its sketching, Level Curves and Level Surfaces	**Ex # 13.1** Q 1-8, 17-20, 23-28, 43-44, 51-64
Limits and Continuity: Limit Along Curves, open and closed sets, continuity, Limits at discontinuities, Limits by converting into polar coordinates, **Differentiability:** Differentials, and Local Linear Approximation	**Ex # 13.2** Q 1-26,34, 35, 38-40 **Ex # 13.4** Q 9-26 ,33-40
Extreme value of the function of two variables: Absolute & Relative Extrema, Extreme Value theorem, The Second Order Partials Test Lagrange Multipliers Method Convex Optimization	**Ex # 13.8** Q1, 2, 9-18 **Ex # 13.9** Q5-12
Multiple Integral: Double Integral over non-rectangular region Double Integral in polar coordinates Triple Integrals	**Ex # 14.2** Q 1-12,15-25,47-56 **Ex # 14.3** Q1-10, 23-34 **Ex # 14.5** Q1-8
Topics in Vector Calculus: Vector Fields, gradient, divergence, and curl Line Integrals Green's Theorem Surface integrals Gauss-Divergence Theorem	**Ex # 15.1** Q 17-28 **Ex # 15.2** Q 7-14,19-30,37-40 **Ex # 15.4** Q1-14 **Ex # 15.5** Q1-3,5-7 **Ex # 15.7** Q1,3,4