

Course Content for Mid-Term 1 Exam

Content/Topics	Question set
Partial Derivatives: Introduction, Functions of Two or More Variables, Domain and its sketching, Level Curves and Level Surfaces	Ex13.1 [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, introduction of partial derivatives	Ex13.2 [1-26,34, 35,38, 39, 1-14,17,18,25-50]
Partial derivatives of functions of two or more variables: partial derivative function and notations, PD as the rate of changes/slopes, PD from tabular data, implicit PDs, PDs and continuity, Higher order PDs, Equality of second order mixed derivatives,	Ex13.3 [57-65,69-76,81-100]
Differentiability, Differentials, and Local Linear Approximation The Chain Rule for PDs with a tree diagram Directional Derivatives and Gradients: Directional Derivatives, Gradients, Properties of gradients, Gradients are normal to curves.	Ex 13.4 [9-26,33-40] Ex 13.5 [1-14,17-36,41-48] Ex13.6 [1-45,53-66]