


Quantitative Economic Analysis I

1. Analyze and demonstrate proficiency in performing algebraic operations on sets, including Cartesian product and equipotent sets, to solve problems related to subsets and functions.
2. Evaluate and classify real numbers, including natural numbers, integers, rational numbers, and real numbers (extended set), to understand the properties and relationships between them.
3. Apply concepts of sets in \mathbb{R} , such as intervals, neighborhoods, limit points, closed sets, and Bolzano-Weierstrass Theorem, to analyze and prove theorems related to real numbers.
4. Demonstrate a deep understanding of sequences, including bounded sequences, convergent sequences, divergent sequences, and sub sequences, by applying limit theorems and Cauchy criteria.
5. Critically analyze series, including infinite series, tests for convergence, and conditionally convergent series, to determine convergence or divergence.
6. Utilize concepts of limits, including one-sided limits, limits at infinity, and limits of monotone functions, to determine and evaluate limits of functions.
7. Apply principles of continuity, including continuity of important functions, intermediate value theorem, and uniform continuity, to analyze and solve problems related to continuous functions.
8. Apply principles of linear algebra, including matrices, determinants, inverse matrices, and special matrices, to solve problems related to vectors and vector spaces.
9. Analyze and solve problems related to eigenvalues, eigenvectors, rank of a matrix, diagonalization of a square matrix, and quadratic forms, to understand and apply concepts of linear algebra.
10. Apply principles of concave programming and Kuhn-Tucker conditions to solve optimization problems over an interval, with direct restrictions on variables, and with multiple constraints.
11. Analyze simultaneous systems of differential equations, including linear systems, stability analysis, and phase diagrams, to model and solve complex systems using programming techniques.

Select Language 

Powered by  Google Translate

