

Mathematics Examination Topics

1. Calculus
 - a. Differential Calculus
 - i. Derivative
 - ii. Partial Derivative
 - iii. Total Derivative
 - b. Unconstrained Optimization
 - i. First-order and second-order conditions
 - c. Constrained Optimization
 - i. The Lagrangian Method
 - ii. First-order and second-order conditions
 - d. Integral Calculus
 - i. Integration and Area under the Curve
2. Linear Algebra
 - a. Vector Operations and Matrix Operations
 - i. Addition, Subtraction, Scalar Multiplication, Matrix Multiplication and Transposes
 - ii. Linear Dependence
 - iii. Determinant, Inverses and Rank of a Matrix
 - b. Systems of Linear Equations
 - i. Elementary Row Operations
 - ii. Cramer's Rule

References

1. Alpha C. Chiang and Kevin Wainwright, Fundamental Methods of Mathematical Economics, 4th Edition.
2. Carl P. Simon and Lawrence Blume, Mathematics for Economists.