The Practical Guide to Quantitative Finance Interviews (The Green Book)

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1 Mathematical prerequisites

1. Mathematical Analysis/Calculus - limits, derivatives and Riemann integrals (knowledge of real analysis, lebesgue integrals and measure theory will be helpful)
2. Linear Algebra - vector spaces, matrices, eigenvalues and eigenvectors.
3. Probability Theory - discrete and continuous probability distributions, statistical inference, and random variables (stochastic calculus & processes and measure-theoretic probability will be helpful).
4. Statistics - mean, variance, estimation, hypothesis testing, forecasting & regression and implementation in R, MATLAB or excel/VBA is preferred.
5. Differential Equations - ordinary and partial differential equations (knowledge of stochastic differential equations will be helpful).
6. Computer Programming - Knowledge about Data Structures and Algorithms & and its implementation in Python or C++ is required.
7. Numerical methods - numerical techniques for solving mathematical problems using mainly finite differences and Monte Carlo simulations.