Mathematics Index

Basics

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| Area | Description |
| Polynomials |  |
| Linear polynomials | Straight line, lagrange polynomial |
| Linear interpolation |  |
| Quadratic polynomials | Shape, root finding, standard factors |
| Cubic polynomials | Factor theorum, sum and difference of cubes |
| Factorising Polynomials |  |
| Exponential Functions | Introduction, common base |
| E | Exponential Growth |
| Basic algebra | Powers,roots, logarithms |

Misc

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| Area | Description |
| Combinatorics |  |
| Basic theorum of counting |  |
| Combinations |  |
| Permuatations |  |
| Properties of combinatorial coefficients |  |
| Binomial Theorum | Proof by induction |

Numerical Algorithms

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| Area | Description |
| Finite Difference | First and second order approximations |
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Differentiation

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| Area | Description |
| Basics |  |
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Integration

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| Area | Description |
| Basics |  |
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Stochastic Processes

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| Area | Description |
| IID | Identical, Independend Random variables |
| Summing IID |  |
| Scaling the variance |  |
| Shifting the distribution |  |
| Stochastic time series |  |
| Stock Price process |  |
| Markov property |  |
| Normal distribution |  |
| Brownian motion |  |
| Stochastic differenial equation |  |
| Ito calculus |  |
| Deriving lognormal process for stock price process from Ito |  |
| Intrduction to differential equations |  |
| Probability of stock exceeding a given level |  |
| Deriving black scholes differential equation |  |
| Expectation of constant multiple of random variable |  |
| Expectation of sum of I.I.D random variables |  |
| Variance of constant multiple of random variable |  |
| Variance of I.I.D random variables |  |
| Cental Limit theorum, |  |