

Integration Workshop 2003
Outline of Complex Analysis Lectures
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Lecture 1: Analytic functions

- 3 equivalent definitions of analytic functions
- Examples: rational functions, exp, log and their relatives
- More complicated examples defined by series (Riemann's zeta) and integrals (Euler's Gamma)

Lecture 2: Basic Cauchy formula

- Line integrals
- Cauchy's theorem for a rectangle
- Cauchy integral formula for a circle
- Existence of derivative implies analyticity

Lecture 3: Applications of the Cauchy formula

- Local behavior at a regular point; conformality
- Classification of isolated singularities
- Local mapping at a critical point
- Maximum principle