

typical questions for the oral exam

- Notion of Holomorphicity, The Cauchy Riemann Equations
- Integration: definition and the Cauchy integral formula
- Power series, region of convergence
- Zeros, pole and residue Theorem
- Hilbert spaces: definition, scalar product, an example of Hilbert space ( $L^2$ )
- orthonormal basis of an Hilbert space, compact, self adjoint operator and spectral theorem