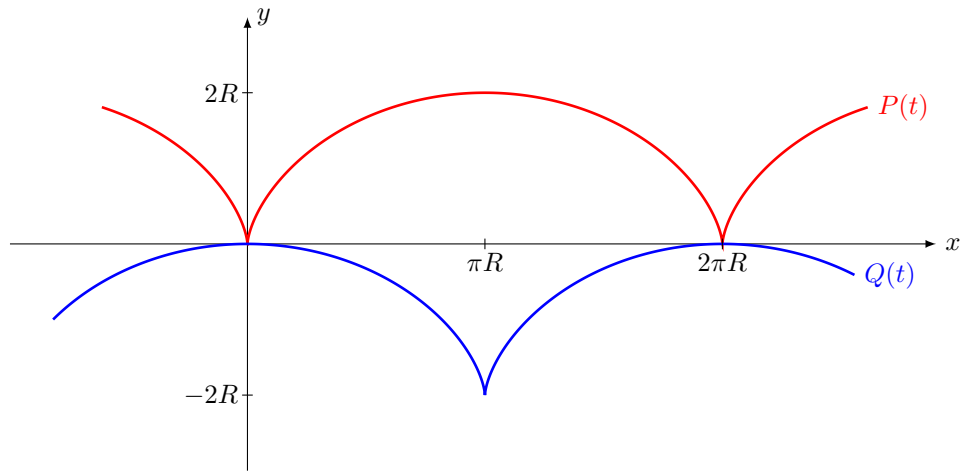


Figures Calculus III

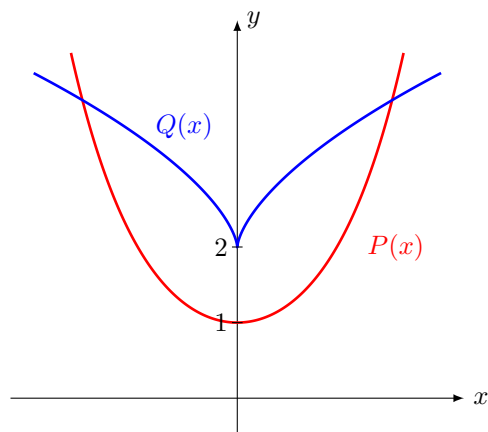
Felix Claeys, Brecht Verbeken, Simon Verbruggen

September 27, 2025

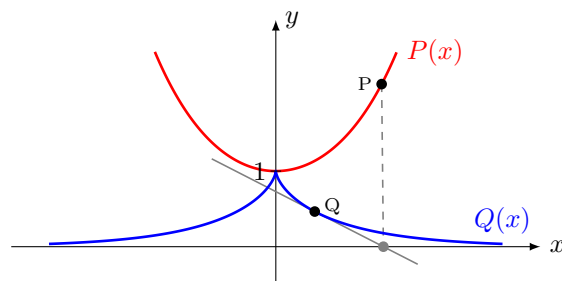
1.2.3 Example evolute cycloid



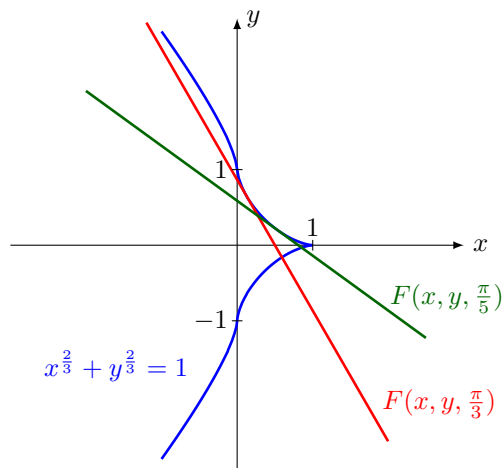
1.2.4 Example evolute catenary



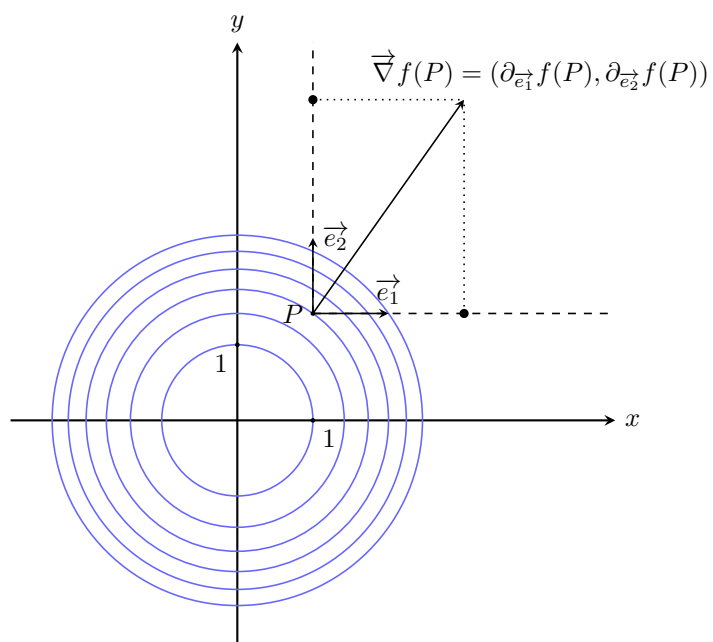
1.2.5 Example involute catenary (tractrix)



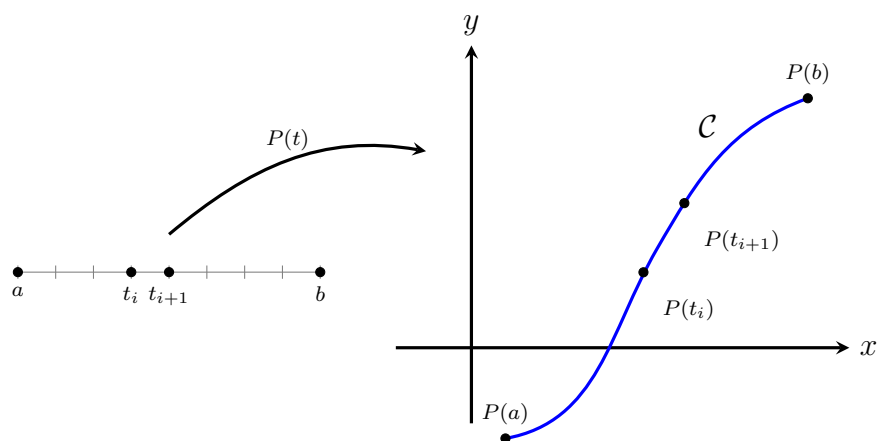
1.2.8 Example envelope family of straight lines



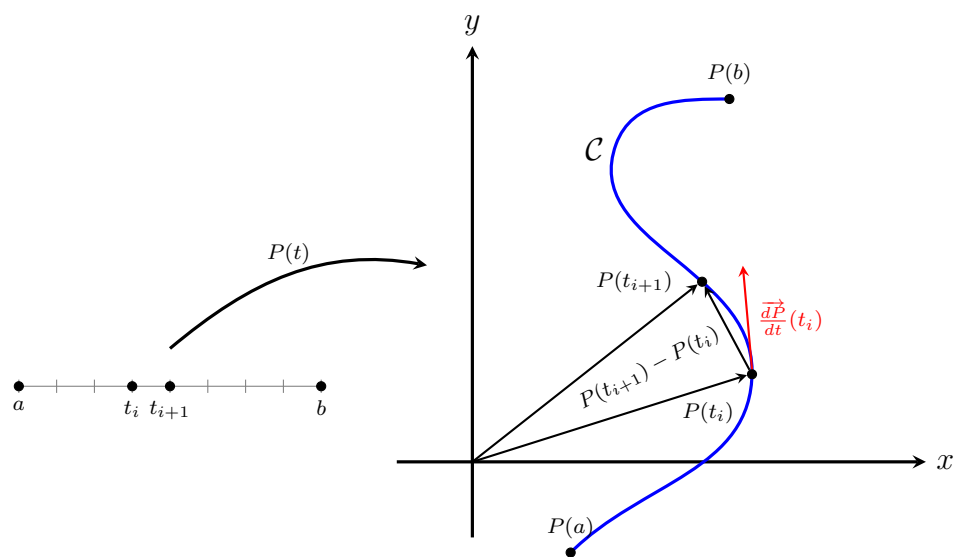
2.3 Gradient of scalar field



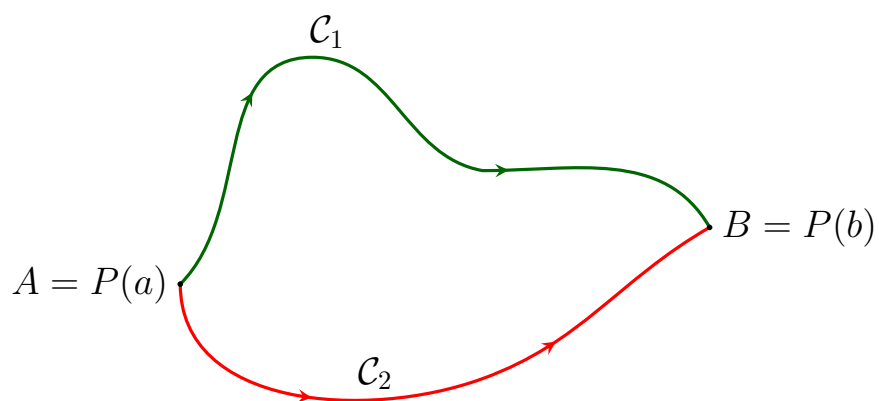
3.1 Line integral of a scalar field



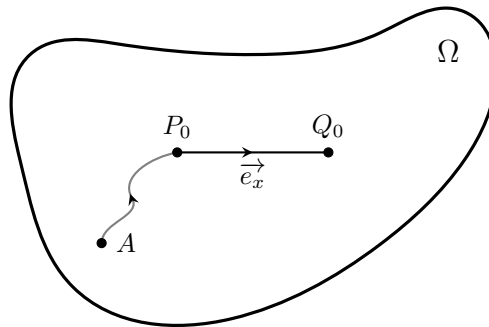
3.2 Line integral of a vector field



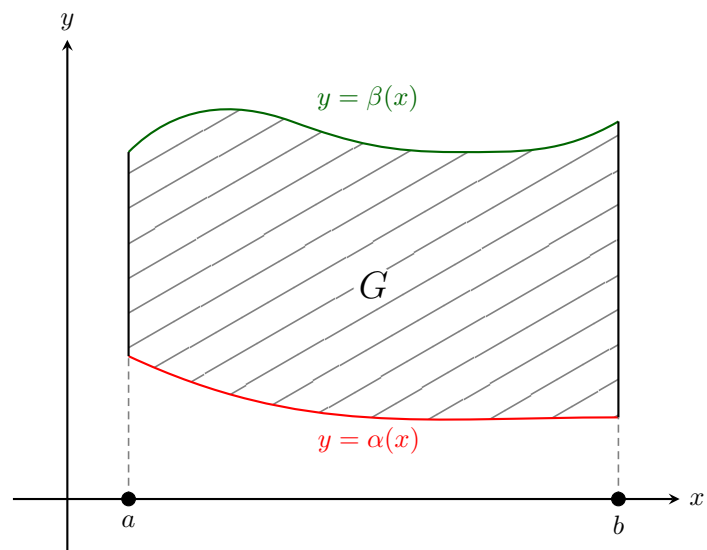
3.4.2 Conservative field along a curve



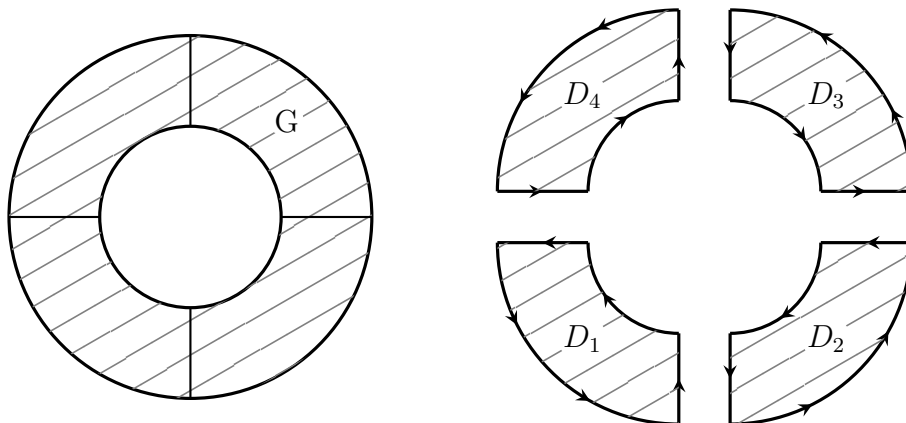
3.4.3 Proof conservative field



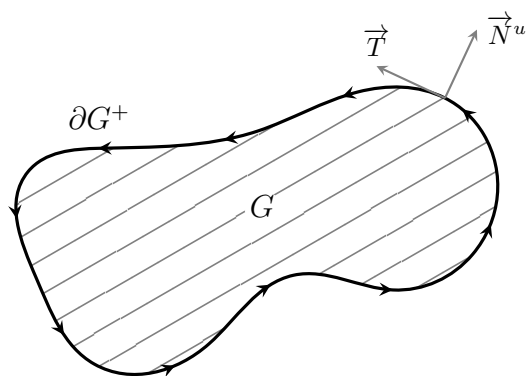
3.5.1 Proof Greens theorem



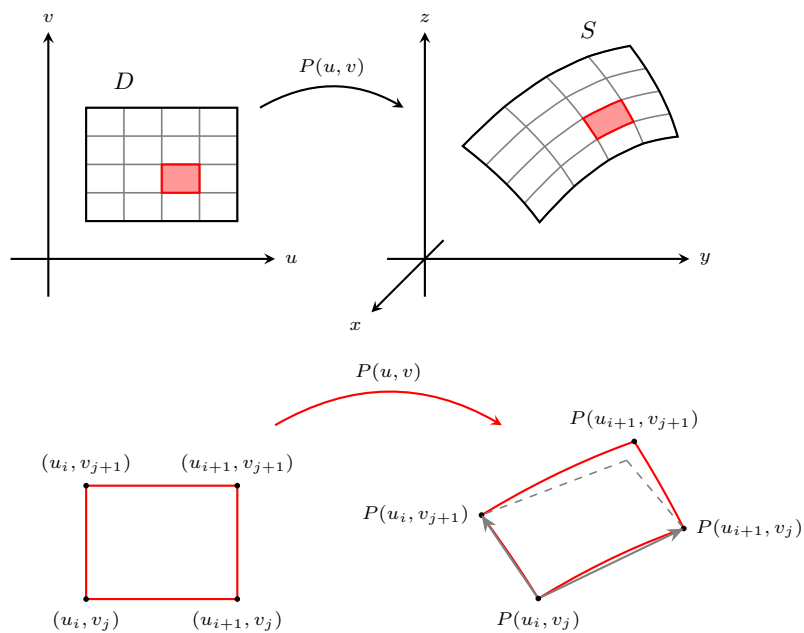
3.5.2 Union of normal spaces



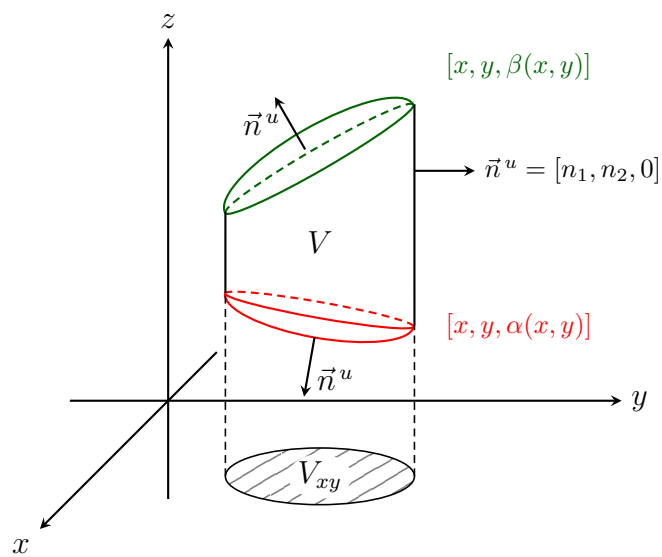
3.5.4 Alternative formulation Greens theorem



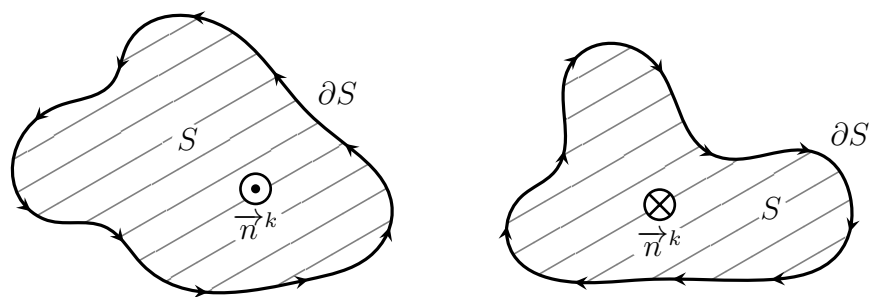
4.1 Surface integral of a scalar field



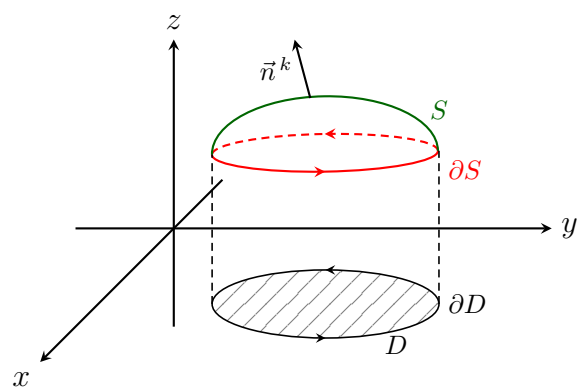
4.4.1 The divergence theorem



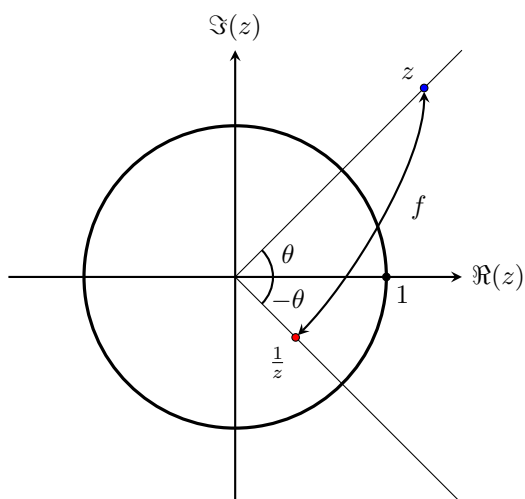
4.6.0 The corkscrew rule



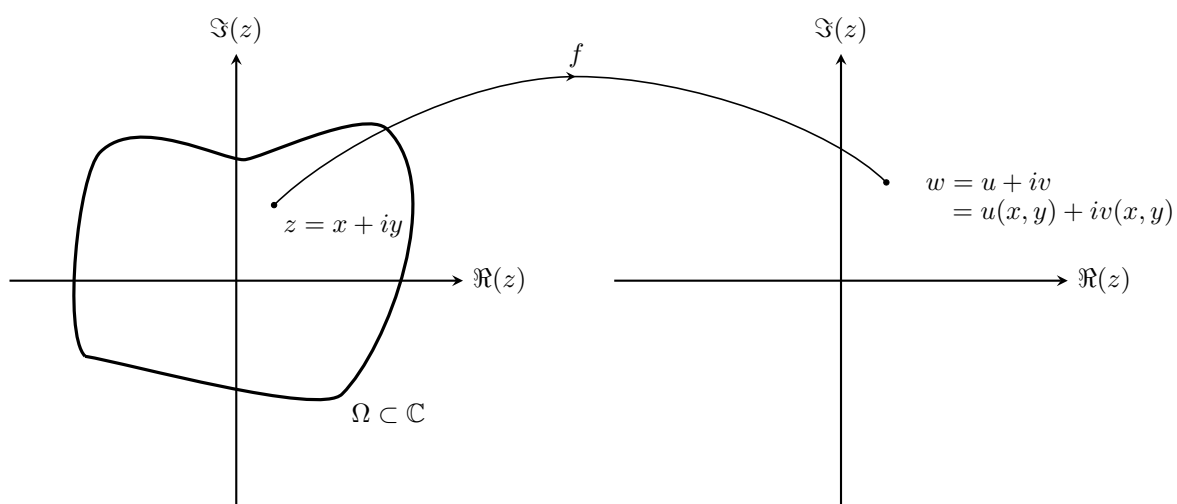
4.6.1 Stokes theorem



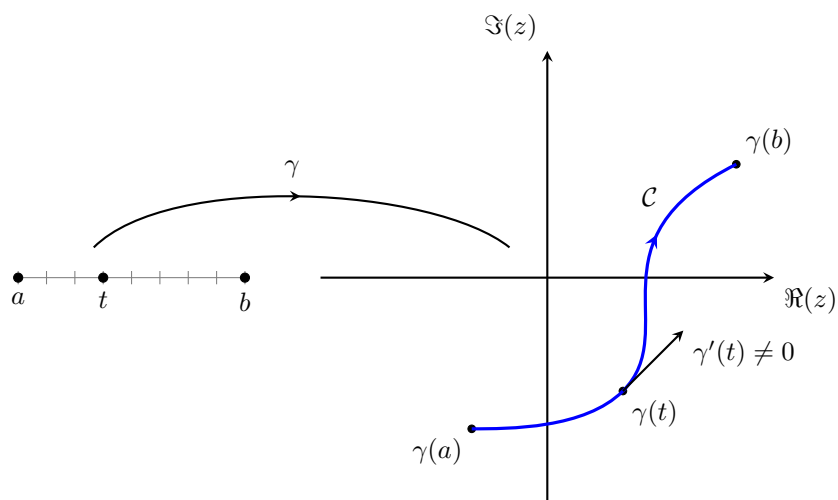
5.1 Inverse function



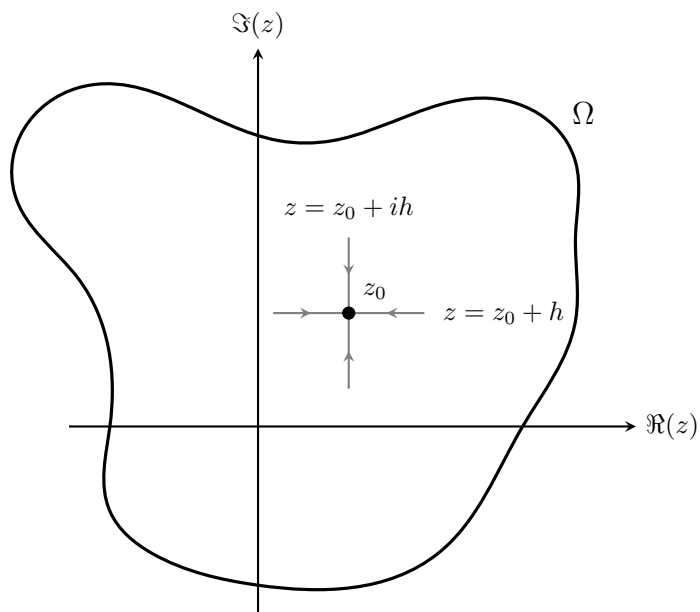
5.1 Complex function



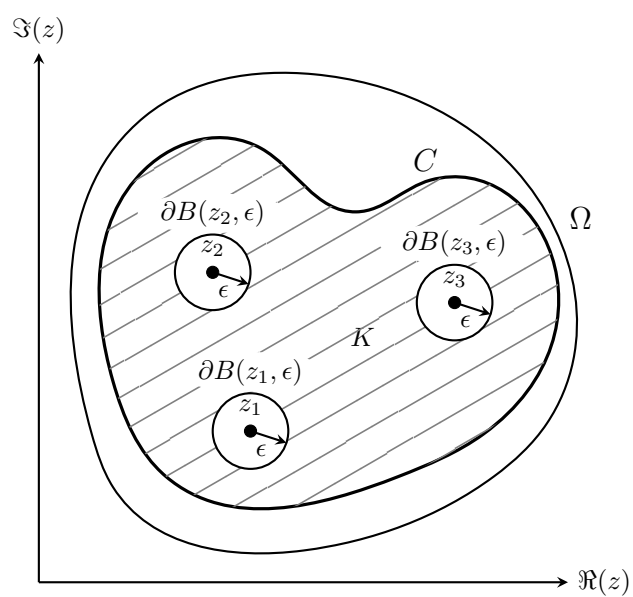
5.2 Complex line integral



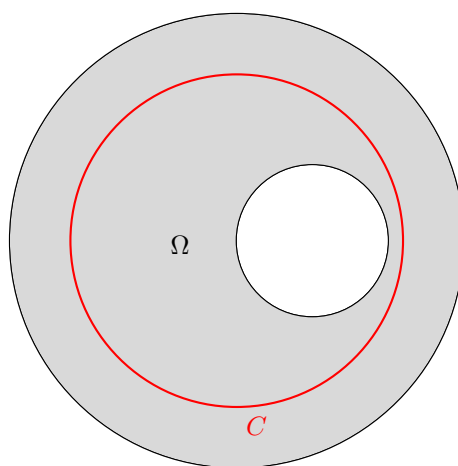
6.2.1 Complex derivative



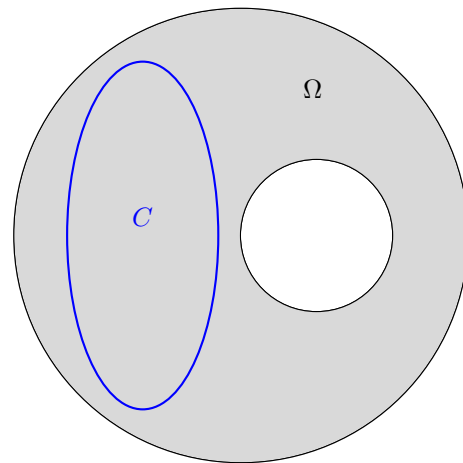
6.3 Cauchy Goursat theorem for multiply connected domains



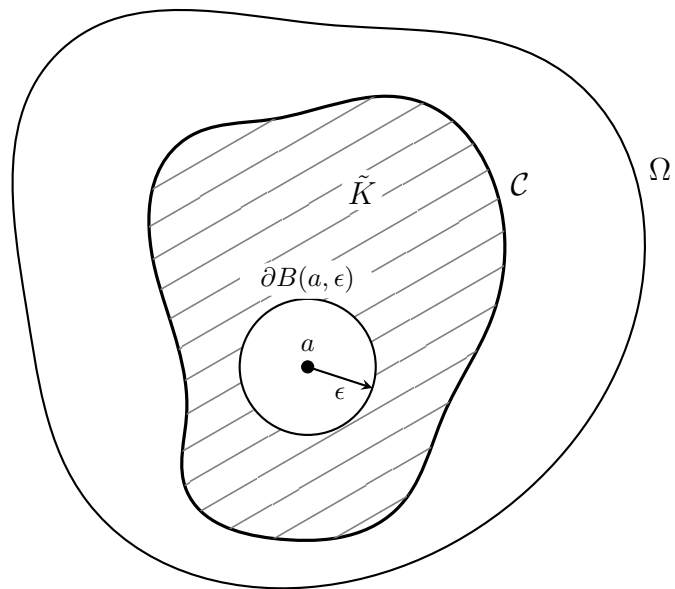
6.3 Contour non simply connected



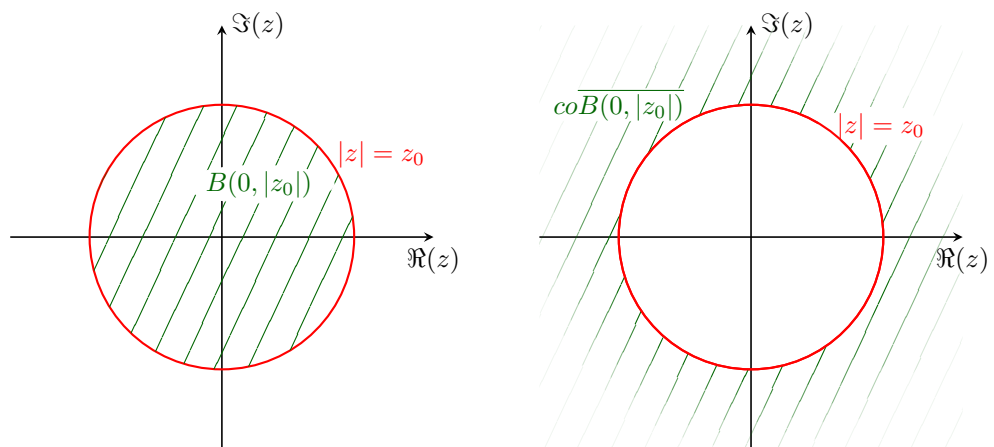
6.3 Contour simply connected



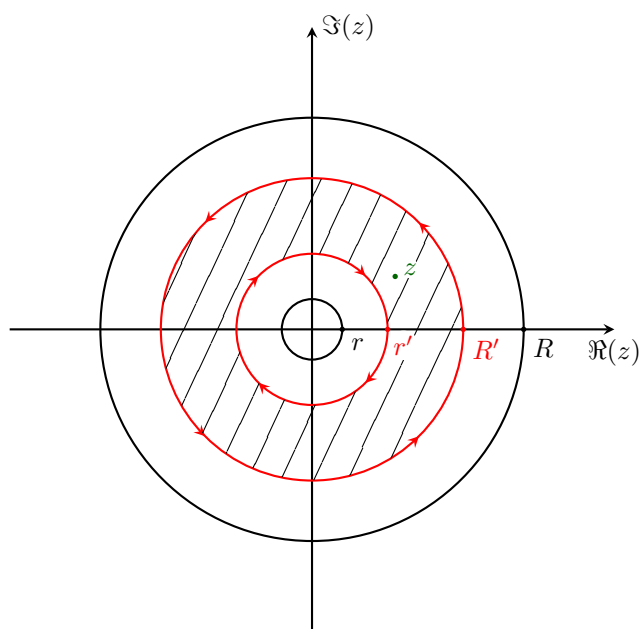
6.3.3 Proof integral formula Cauchy



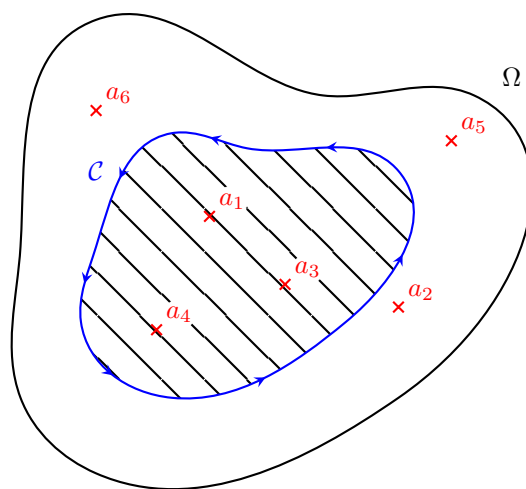
7.2.4 Theorem convergence regions positive and negative power series



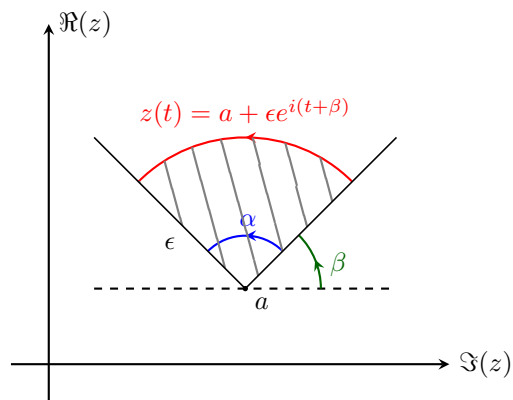
8.2.1 Proof theorem Laurent series



8.5.6 Residue theorem for region with multiple singularities



9.3 Estimation lemmas



9.5 Summation of series

