

SOLUTIONS SHEET 6

YANNIS BÄHNI

Exercise 1.

(a) Let $r \in \mathbb{R}_{>0} \setminus \{1\}$. Partial fraction decomposition yields

$$\int_{\partial B_r(0)} \frac{2\zeta - 1}{\zeta(\zeta - 1)} d\zeta = \int_{\partial B_r(0)} \frac{d\zeta}{\zeta} + \int_{\partial B_r(0)} \frac{d\zeta}{\zeta - 1} = \begin{cases} 4\pi i & 1 < r, \\ 2\pi i & 0 < r < 1. \end{cases} \quad (1)$$