Complex Variables
Spring 2020

Assignment 7.2
Due March 18

Exercise 1. Textbook exercise III.1.1.

Exercise 2. Let $\Omega \subset \mathbb{R}^2$ be a domain. Suppose $\gamma : [a, b] \to \Omega$ is a C^1 path and that $\omega = P\,dx + Q\,dy$ be a C^0 1-form on Ω. If $\phi : [\alpha, \beta] \to [a, b]$ is a C^1 reparametrization of $[a, b]$, prove that

$$\int_{\gamma\circ\phi} \omega = \int_{\gamma} \omega.$$

Exercise 3. With hypotheses as in the preceding exercise, show that

$$\int_{-\gamma} \omega = -\int_{\gamma} \omega.$$