

Written assignment 2

Write in LaTeX a document of about 5-7 pages (more allowed) that describes the following topics:

1. Definition of a function being analytic (also it being differentiable). Relation to the Cauchy-Riemann Equations.
2. Definition of the integral of a function $f(z)$ over a curve C . Basic results related to it.
3. A discussion of Cauchy's Integral formula:
 - The theorems that led us to it, the main ideas in those theorems.
 - Consequences of the formula, including Louisville's Theorem and its consequences, and the power series representation of analytic functions.
4. Discussion of key ways in which complex functions differ from their real counterparts.

You should include at least the statements of definitions and theorems. You should at least sketch proofs or key ideas for selected theorems. You have a certain leeway as to how you structure the document.

You can use OverLeaf¹ for your code, or if you prefer to install software on your personal computer let me know.

You should email me both the pdf version, which you can get by clicking at the PDF option in overleaf, and the tex version, which you can get by clicking on "project" and then choosing the "Download as zip" option.

Due date: Friday, April 15

¹www.overleaf.com