

“Complex Analysis II”

1. Series in \mathbb{C}

- Comparison test, Ratio test
- Sequence of Function: Converge and Uniform Converge
- Weierstrass μ test

2. Some Theorems

- Liouville's Theorem, Picard Theorem, Morera Theorem
- The Fundamental Theorem of Algebra with Proof

3. Power Series

- The Radius of Convergence
- Taylor Theorem
- Poles
- The Index of Function
- The Argument Principle
- Rouché Theorem

4. Residues

- Residue Theorem

5. Evaluation of Definite Integrals

6. Maximum and Minimum Modulus Theorems

7. Schwarz Lemma

8. Conformal Functions

Books:

1. Complex Variables and Applications, by Ruel V. Churchill