Tip sheet for the final exam

The final is based on the material covered throughout the term. You are **NOT** allowed to reference any theorems that we have not covered in the lectures. The exam will consist of the following parts:

- (i) (Worth 15 %) Choose and answer **only** one of the following questions:
 - You can choose to state and prove a theorem from the list provided in this tip sheet (this will be numbered as Question 1 on the test).
 - You can choose to solve the new problem asked in Question 2.
- (ii) Lecture Notes: (Worth 30 %) There will be three questions similar to the examples presented in the lecture notes.
- (iii) Assignments: (Worth 35 %) There will be three questions from the assignments 1 to 7 including any bonus questions.
- (iv) Problems: (Worth 20 %) There will be one or two problems possibly different from the assignments and examples.

The list of the theorems:

- 1. Cauchy-Riemann Equations.
- 2. Cauchy-Goursat Theorem (The proof of the preceding lemma is not needed).
- 3. Cauchy's integral formula.
- 4. Liouville's Theorem.
- 5. Fundamental theorem of algebra.
- 6. Maximum modulus principle theorem.
- 7. Taylor series theorem.
- 8. Laurent series theorem.
- 9. Theorem on behaviour of functions near essential singularities.
- 10. Rouche's Theorem.