

Math 4150/6150, Homework #1, Due date: 09/27/2018

- **Suggested problems:** Chapter 2: 2.2, 2.3, 2.25, 3.1, 3.13, 3.14, 3.20.
- **Required problems:** Chapter 2: 2.5, 2.6, 2.11, 2.14, 2.26, 2.28, 3.9, 3.10, 3.20, 3.25, 3.26, 3.31, 3.32, 3.34.

Additional required problem: Prove the following L'hospital's rule for a holomorphic functions. Assume $\lim_{z \rightarrow c} f(z) = 0 = \lim_{z \rightarrow c} g(z)$, and $g'(z) \neq 0$ in a neighborhood of $z = c$, and the limit $\lim_{z \rightarrow c} f'(z)/g'(z)$ exists. Then $\lim_{z \rightarrow c} f'(z)/g'(z) = \lim_{z \rightarrow c} f(z)/g(z)$.