Due Date: October 16, 2018.

The questions are from Stein and Shakarchi, *Complex Analysis*, unless otherwise stated.

Chapter 2. Exercise 11, 12.

Chapter 3. Exercise 11, 19, 20.

Chapter 5. Exercise 2, 3, 4, 5, 6, 7, 8, 9.

Correction. In Chapter 2, Exercise 12(b), in the integral formula one should read $u(e^{i\varphi})$ instead of $u(\varphi)$.

Correction. In Chapter 5, Exercise 7(a), one should add the condition that $a_n \neq -1$ for all n.

Hint. In Question 3 of Chapter 5, once you show that $|\Theta(z|\tau)| \leq Ae^{a|z|^2}$, to see that the order of growth of F is exactly 2, it will help to know that $\Theta(z|\tau)$ is quasi-periodic in z, namely $\Theta(z+\tau|\tau) = \Theta(z|\tau)e^{-\pi i\tau}e^{-2\pi iz}$.

Hint. In Question 4 of Chapter 5, once you show that $|F(z)| \leq Ae^{a|z|^2}$ in part (a), it is easy to see that the order of growth of F is exactly 2 by part (b), using Theorem 2.1 of Chapter 5.