



COMPLEX VARIABLES
FALL 2024

ASSIGNMENT 12.1
DUE DECEMBER 4

Exercise 1. Textbook exercise 2.4.1.

Exercise 2. Textbook exercise 2.4.2.

Exercise 3. Textbook exercise 2.4.3.

Exercise 4. Textbook exercise 2.4.8.

Exercise 5. Suppose that $f(z)$ is entire and satisfies $\operatorname{Im} f(z) \leq a$ for some (fixed) $a \in \mathbb{R}$ and all $z \in \mathbb{C}$. Prove that $f(z)$ is constant. [*Suggestion.* Compose $f(z)$ with $g(w) = e^{-iw}$ and study $g(w)$ instead.]