

MATH 2050C Mathematical Analysis I

2022-23 Term 2

Problem Set 2

due on Feb 3, 2023 (Friday) at 11:59PM

Instructions: You are allowed to discuss with your classmates or seek help from the TAs but you are required to write/type up your own solutions. You can either type up your assignment or scan a copy of your written assignment into ONE PDF file and submit through Gradescope on/before the due date. Please remember to write down your name and student ID. **No late homework will be accepted.** All the exercises below are taken from the textbook.

Required Readings: Chapter 2.2, 2.3

Optional Readings: none

Problems to hand in

Section 2.2: Exercise # 5, 10

Section 2.3: Exercise # 7, 9, 12

Suggested Exercises

Section 2.2: Exercise # 3, 6, 7, 9, 12, 13, 15, 18

Section 2.3: Exercise # 3, 4, 5, 8, 10, 11, 13, 14

Challenging Exercises (optional)

1. (Existence of n -th root) Let $n \in \mathbb{N}$. Prove that for every $a > 0$, there exists some $x > 0$ such that $x^n = a$.