MATH 2050C Mathematical Analysis I
2019-20 Term 2
Problem Set 2
due on Jan 22, 2020 (Wednesday) at 9:15AM

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. Please submit your completed homework on time either during the tutorials or at the designated box (marked with the course number) outside the general office of Mathematics Department (Room 220 of Lady Shaw Building). **No late homework will be accepted.** Remember to write down your name (in English <u>and</u> Chinese) and student ID on your problem set. 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 $x^n = a$.