Exam 1   Math 361A   Spring 2023
Due: Friday, 10 February

- Work all problems. Write concisely and clearly in complete sentences that incorporate equations. Typed work is appreciated. Use of LaTeX will receive a 2.5% bonus.
- Submit to the class drop box.
- Exercises are taken from the course text, *Introductory Analysis*.
- *Ethic*: In completing this exam you can consult the text, other members of the class, and the instructor. The written work that you submit should be your own.

1) **Cube-root of** 3.

    a) Show that, if it exists, the cube-root of 3 is irrational.
    b) Using completeness of R, prove that the cube-root of 3 exists.

2) Suppose A, B, and C are countable. Show that $A \times B \times C$ is countable.

3) Exercises 1.51 and 1.52

4) Exercise 2.25

5) Exercises 2.26 and 2.27