PROBLEM SET II

DUE SUNDAY, JANUARY 26, 11:59PM

Please neatly write your solutions in complete sentences and label them clearly. To submit your work, log in to Gradescope with your @ucsd.edu email (either directly or through Canvas). Please make sure the scan is clear and prepare early since uploading takes some time.

Problem 1. Exercise $9, 11, 12, 14, 17$ from Rudin Chapter 5. In Exercise 14, a function f is convex on (a, b) if for all $0 \leq t \leq 1$ and $x_1, x_2 \in (a, b)$:

$$f(tx_1 + (1-t)x_2) \leq tf(x_1) + (1-t)f(x_2).$$

Problem 2. Exercise $1, 3, 5$ from Rudin Chapter 6.