The text for this course is *Mathematical Analysis I* second edition by Beatriz Laferriere, Gerardo Laferriere and Nguyen Mau Nam. The exercises below are from this text. This homework covers the material discussed in Lectures 9,10,11,12 and 13. It is due 10-19-20.

Problem 41: Let c be a fixed real number. Define $a_n = c$ for all $n \in \mathbb{N}$. Prove $\lim_{n\to\infty}(a_n) = c$.

Problem 42: Exercise 2.1.1 part c.

Problem 43: Exercise 2.1.6 part a.

Problem 44: Exercise 2.1.10

Problem 45: Exercise 2.1.11

Problem 46: Exercise 2.1.12 part a.

Problem 47: Exercise 2.2.1

Problem 48: Exercise 2.2.2

Problem 49: Exercise 2.3.1

Problem 50: Exercise 2.3.3 part a.

Problem 51: Exercise 2.3.4

Problem 52: Exercise 2.3.6 part a.

Problem 53: Exercise 2.4.1

Problem 54: Exercise 2.4.2

Problem 55: Exercise 2.4.4

Problem 56: Exercise 2.4.5

Problem 57: Exercise 2.5.1 parts a and d

Problem 58: Exercise 2.5.2 part a

Problem 59: Exercise 2.5.4.

Problem 60: Exercise 2.2.5