CS350 – Lab 11
Due Date: May 2

Purpose: We have seen several important complexity class of problems: Poly, Poly-Check/NPoly, and Expo. If we restrict ourselves to decisions problems then we have the complexity classes P, NP, and Exp. These classes serve as ways to describe problems that are tractable, verifiable, and practical only for small inputs. The purpose of this lab is for you to become comfortable with these class definitions.

Knowledge: This lab will help you become familiar with the following content knowledge:

- How to determine whether a problem is in Poly or Expo.

- How to determine whether a problem is in PolyCheck and/or NPoly.

Task: Follow the steps in this lab carefully to complete the assignments.

Assignment 1:
Complete exercise 11.6 a) c) d) and e) on p247 of your text.

Criteria for Success: You need a working python program and have determined its running time. Then you need two informal explanations about the complexity class. You may use the chart on p199 to determine the relationships between order of growths.

Assignment 2:
Complete 12.2 a) and 12.3 a) on p268 of your text.

Criteria for Success: You have descriptions (verbal is sufficient) of algorithms for verifying and nondetermistically solving the problem.

Submit your python program in Canvas. Written answers may be submitted in Canvas or on paper for grading.