Lab 15

Ch En 263 – Numerical Tools

Due: 12 Mar. 2024

Instructions

- Complete the exercise(s) below, and submit the following files to Learning Suite:
 - Handwritten portion: scan each page (or take a picture) and combine them into a single pdf named: LastName_FirstName_Lab15.pdf
 - Excel portion: submit a workbook named LastName_FirstName_Lab15.xlsx where each worksheet tab is named "Problem_1", "Problem_2", etc.
 - Python portion: submit a separate file for each problem named LastName_FirstName_ Lab15_ProblemXX.py where XX is the problem number.
- \bullet Warning: the LS assignment will close promptly at 11:59 pm and late assignments will only receive 50% credit.

Lab Exercises

1. Find a valid solution to the nonlinear system

$$x^2 - 2x + 3y = 4$$
$$x^2 - 2y = 2$$

using the optimization tool (Solver) in Excel.

2. Use Scipy's minimize function to find the solution to the following system of equations:

$$x_0 x_1 x_2 - x_0^2 + x_1^2 = 1.34$$
$$x_0 x_1 - x_2^2 = 0.09$$
$$e^{x_0} - e^{x_1} + x_2 = 0.41.$$