Problem Set #2

MACS 30150, Dr. Evans
Due Wednesday, Jan. 15 at 11:30am

Do the following Exercises from the Brigham Young University Applied Mathematics and Computational Emphasis (ACME) Python labs Humpherys and Jarvis (2017) and from Dr. Evans' numerical integration notebook. Submit your answers and work as Jupyter notebooks so I can read your answers, see your code, and execute your code to see the results.

1. **Numerical differentiation exercises (5 points).** Do problems 1 through 5 and 7 (skip 6) from ACME: Numerical Differentiation lab. You will need to download the plane.npy file, which is saved in the course repository.

2. **Numerical integration exercises from Evans: Numerical Integration lab (5 points).** Do exercises 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 4.1, 4.2, and 4.3 from the Numerical Integration Jupyter notebook used in class. [Note. This means to do all the exercises listed in the notebook.]

References

Humpherys, Jeffrey and Tyler Jarvis, "Computational Labs for Foundations of Applied Mathematics, Volumes I and II," 2017.