Monte Carlo Methods Spring 2025
Homework 01 - Introduction

Due: Tuesday, Jan 28, 2024, 11:59 PM

Textbook = Rubinstein, R. Y. and Kroese, D. P. (2017), Simulation and the Monte Carlo Method (3rd edition), Wiley, ISBN: 978-1-118-63216-1.

1. (10 points) Textbook, Pg. 42, Ch. 1, Ex. 1.8
2. (20 points) Textbook, Pg. 42, Ch. 1, Ex. 1.12
3. (20 points) Jupyter Notebook, `estimating pi.ipynb`. Instructions below.

Instructions for Jupyter Notebook

- All homework (written and coding) will be submitted on Gradescope as a PDF.
- Follow the instructions in the notebook. Write out relevant lines of code, produce outputs and plots that are asked for, and respond to questions in markdown, if any.
- Convert your notebook to a PDF file. Make sure that the PDF file is not excessively tall and skinny. Some ways to convert your notebook to PDF:
  - If you are using Jupyter, open it in a web browser and print to PDF. This should be easy because the notebooks are already opened in a browser.
  - If you are using VS code, you can export your finished notebook to an HTML file, open it in a browser, and print to PDF.
- You will lose *1 point per question* in your submission for *each* of the following infringements:
  - Not matching your pages to the problem number on Gradescope.
  - Submitting a PDF that is a single, excessively tall and skinny page.
  - We cannot see your plots, code, or response to questions.
  - Not orienting your pages correctly.
  - Not cropping your pages correctly.