AMATH 301 - Spring 2018

Homework #0

Due on Tuesday, April 3, 2018

This homework is NOT for a grade. It is intended to give you practice with the basics of Matlab, and, more importantly, give you practice submitting an assignment to Scorelator. Unlike future assignments, you have ten attempts.

1. **Variables and Basic Computation** Define the following variables in Matlab:

$$x = 10, \qquad y = -2, \qquad z = \pi.$$

   (a) Save z in the file `A1.dat`.

   (b) Calculate $x + y - z$ and save your answer in the file `A2.dat`.

   (c) Calculate x^3 and save your answer in the file `A3.dat`.

   (d) Calculate e^{-y} and save your answer in the file `A4.dat`.

   (e) Calculate $\cos(zy)$ and save your answer in the file `A5.dat`.

2. **Matrices and Vectors** Define the following matrices and vectors in Matlab:

$$A = \begin{pmatrix} -1 & 2 & 1 \\ 3 & 1 & -1 \end{pmatrix}, \qquad \mathbf{x} = \begin{pmatrix} 1 \\ 2 \\ -1 \end{pmatrix}, \qquad \mathbf{y} = \begin{pmatrix} -2 \\ 0 \\ 1 \end{pmatrix},$$

   (a) Save $\mathbf{x}$ in the file `A6.dat`.

   (b) Save the second row of A in the file `A7.dat`.

   (c) Calculate $\mathbf{x} - \mathbf{y}$ and save your answer in the file `A8.dat`.

   (d) Calculate $A\mathbf{y}$ and save your answer in the file `A9.dat`.

   (e) Calculate $A(\mathbf{x} + \mathbf{y})$ and save your answer in the file `A10.dat`.