MAT1575 Module 5 – Graphing sequences and series using pyplot.

Objectives: Study sequences and series numerically and graphically using pyplot.

1. A basic implementation for plotting sequences and series using pyplot can be found here (make sure to read all of the comments): `https://trinket.io/python/2b4523cb78`

2. Plot the following sequences and series using pyplot and guess whether or not they converge:

   (a) $a_n = 3n + 2$

   (b) $a_n = \frac{n^k}{e^n}$ for $k = 2, 3$

   (c) $a_n = \frac{-1}{n+1}$

   (d) $a_n = \frac{n+1}{n+2}$

   (e) $a_n = \left(1 + \dfrac{1}{n}\right)^n$

   (f) $\displaystyle\sum_{n=0}^{m} 3n + 2$

   (g) $\displaystyle\sum_{n=0}^{m} \frac{n^k}{e^n}$ for $k = 2, 3$

   (h) $\displaystyle\sum_{n=0}^{m} \frac{-1}{n+1}$

   (i) $\displaystyle\sum_{n=0}^{m} \frac{n+1}{n+2}$

   (j) $\displaystyle\sum_{n=0}^{m} (-1)^n$