Problem A.1 - Newton's Method

Allison Davis

April 12, 2019

1. Equation 1:
   $\frac{1}{100}[x^4 + (e - 2 - \sqrt{2})x^3 + (2\sqrt{2} - \sqrt{2}e - 3 - 2e)x^2 + (2\sqrt{2}e + 3\sqrt{2} - 3e)x + 3\sqrt{2}e] = 0$
   Approximations to the solution:
   $z_0 = 2$ gives an approximate solution of 1.41.
   $z_0 = -2$ gives an approximate solution of 3.00.
   $z_0 = -5$ gives an approximate solution of -2.72.

2. Equation 2:
   $\tan(x) - x - 2 = 0$
   Approximations to the solution:
   $z_0 = \pi/2$ gives an approximate solution of 1.57.
   $z_0 = \pi/3$ gives an approximate solution of 1.42.
   It seems like most values exceed N iterations.