

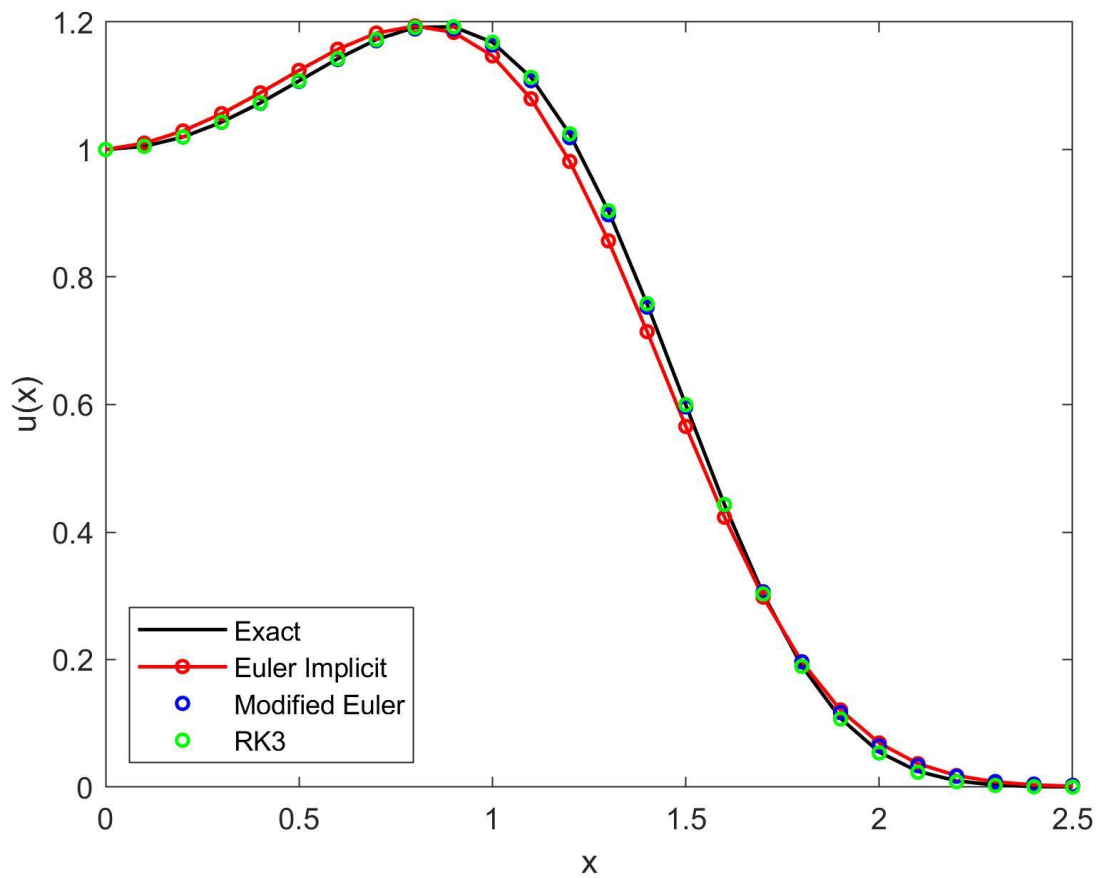
MAE384 Spring 2022 HW6 Solution

Problem 1

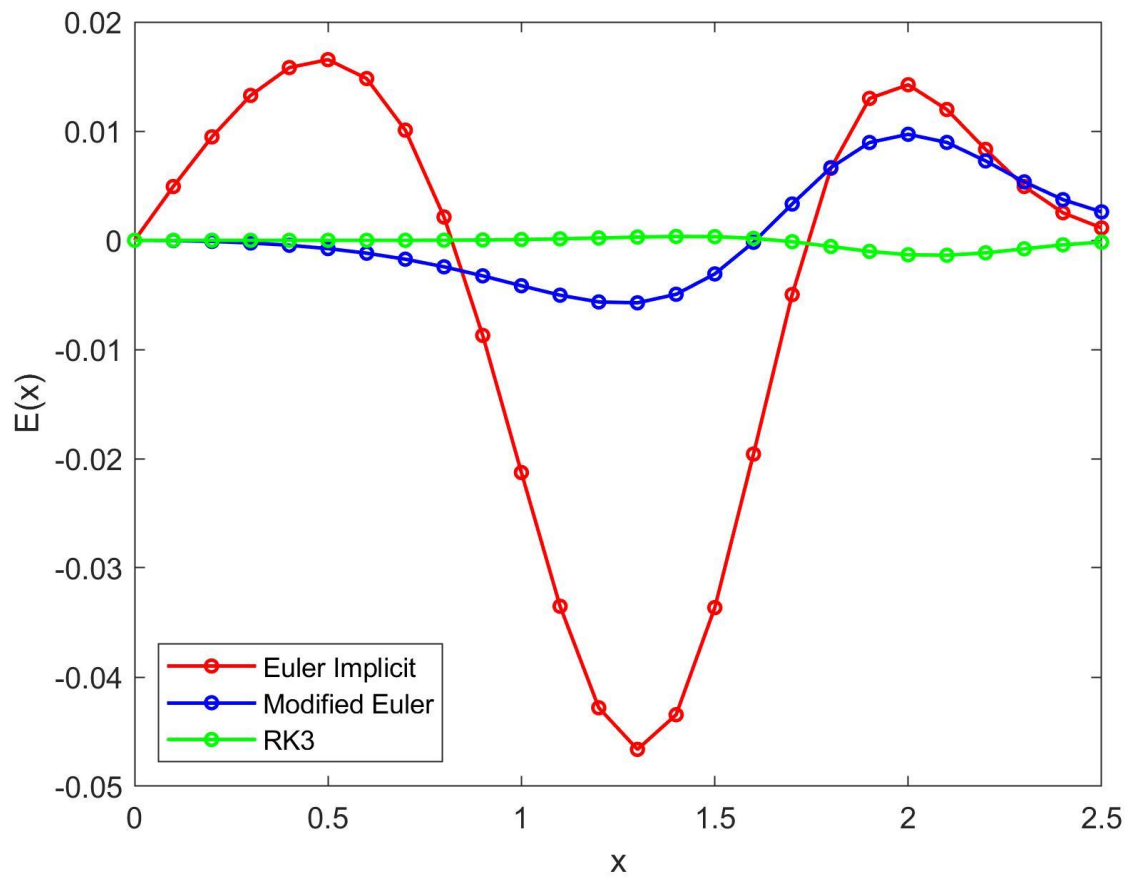
Analytic solution is

$$u(x) = \left(1 + \frac{x^2}{2}\right) e^{-\frac{x^4}{4}}$$

Plot of analytic and numerical solutions:



Plot of numerical error $E(x)$:



Problem 2

Analytic solution is

$$u(x) = e^{2x} + 2e^{-x} + e^{-2x}$$

Plot of analytic and numerical solutions:

