

# Assignment 12

## CS374

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Assigned by :

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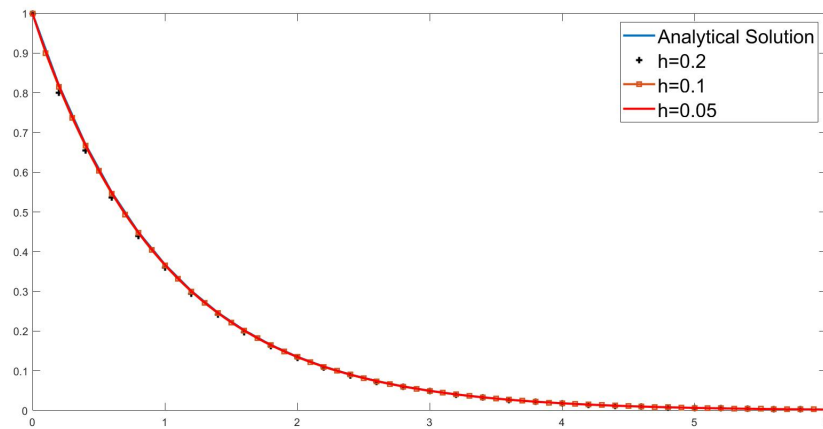
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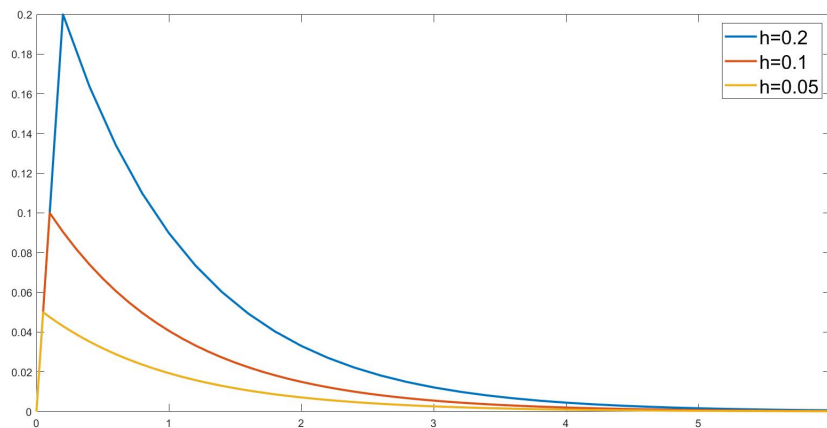
# 1 Euler's Method

## 1.1 Question 1

$$Y'(x) = -Y(x); \quad Y(0) = 1 \quad (1)$$



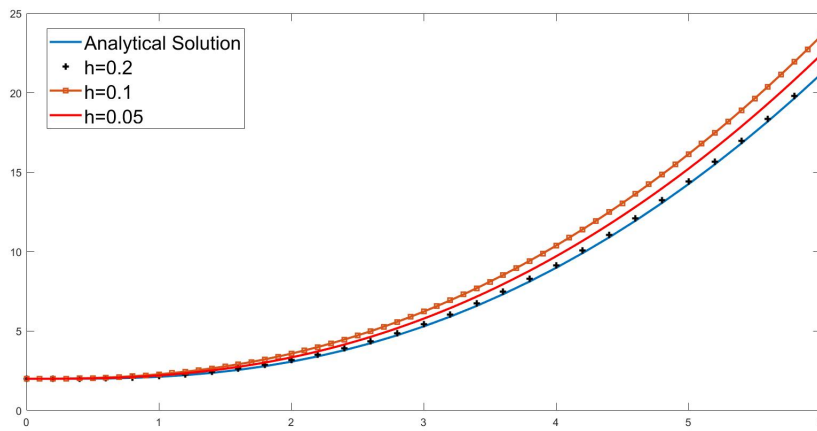
Plot of  $Y(x)$  derived from Euler's method for different values of  $h$



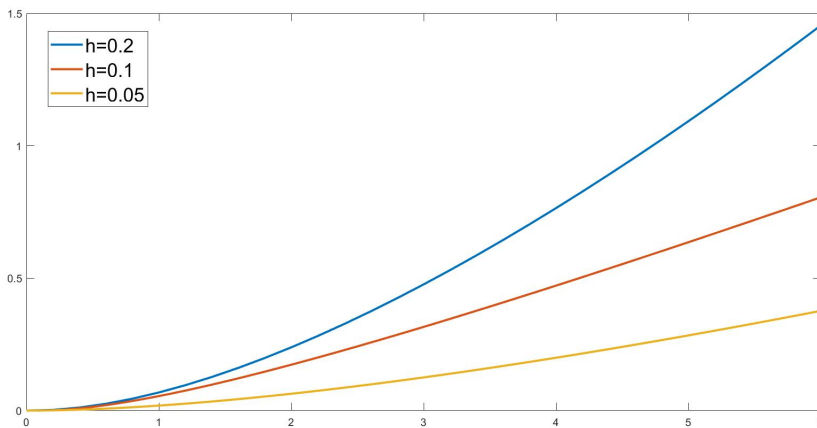
Plot of Error between  $Y(x)$  derived from Euler's method and Analytical  $Y(x)$  for different values of  $h$

## 1.2 Question 2

$$Y'(x) = \frac{Y(x) + x^2 - 2}{(x + 1)}; \quad Y(0) = 2 \quad (2)$$



Plot of  $Y(x)$  derived from Euler's method for different values of  $h$



Plot of Error between  $Y(x)$  derived from Euler's method and Analytical  $Y(x)$  for different values of  $h$