

M353 6.3 Sys Euler (S. Zhang) .

1. (6.3:a1) Given an initial value problem

$$x'' - 3x' + 2x = 2e^{3t}, \quad 0 < t < 0.2$$

$$x(0) = 3, \quad x'(0) = 6.$$

Find the exact solution. Convert the equation to a system.

Use Euler's method with

- (1) $h = 0.1$ and find the error.
- (2) $h = 0.05$ and find the error.
- (3) Extrapolation and find the error.