Chapter 8 - Numerical Soln of ODEs - Spring 2021 - Part 2

Hi Autar, when you submit this form, the owner will be able to see your name and email address.

1

The order of accuracy for a single step (local) in Euler's method is

- ◯ $O(h)$
- ◯ $O(h^2)$
- ◯ $O(h^3)$

2

The order of accuracy for Euler's method from starting to end point (global) is

- ◯ $O(h)$
- ◯ $O(h^2)$
- ◯ $O(h^3)$

3

Question

To solve the ordinary differential equation

$$3\frac{dy}{dx} + 5y^2 = \sin x, y(0) = 5$$

by Runge Kutta 2nd order method, you need to rewrite the equation as

(A) $\frac{dy}{dx} = sin\, x - 5y^2, y(0) = 5$

(B) $\frac{dy}{dx} = \frac{1}{3}(sin\, x - 5y^2), y(0) = 5$

(C) $\frac{dy}{dx} = \frac{1}{3}(-cos\, x - \frac{5y^3}{3}), y(0) = 5$

(D) $\frac{dy}{dx} = \frac{1}{3} sin\, x\, , y(0) = 5$

- ◯ Option A
- ◯ Option B
- ◯ Option C
- ◯ Option D

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