



MITx CSE.0002x

Introduction to Computational Science and Engineering

[Help](#)



sandipan_dey ▾

- [Course](#)
- [Progress](#)
- [Dates](#)
- [Discussion](#)
- [MO Index](#)

[🏠](#) [Course](#) / [3 Finger Exercises \(FE\)](#) / [3.5 Finger Exercises 3 \(FE3\)](#)

< Previous

 

 

 

 

 

 

Next >

3.5.5 Finger Exercise: Explicit or Implicit?

 Bookmark this page

Finger Exercises 3 due Aug 17, 2023 05:00 IST Completed

Problem: Determine whether a method is explicit or implicit

4/4 points (graded)

MO2.7

Consider the following method:

$$\underline{v}^{n+1} = \underline{v}^n + \frac{1}{2}\Delta t \left[\underline{f}(\underline{v}^{n+1}, t^{n+1}) + \underline{f}(\underline{v}^n, t^n) \right]$$

(3.28)

Is this method explicit or implicit?

☐ explicit

☒ implicit



Consider the following method:

$$\underline{v}^{n+1} = \underline{v}^{n-1} + 2\Delta t \underline{f}(\underline{v}^n, t^n)$$

(3.29)

© All Rights Reserved

Is this method explicit or implicit?



☒ explicit



☐ implicit

[About](#)

[Affiliates](#)

[edX for Business](#)

[Open edX](#)

[Careers](#)

[News](#)

$$\underline{v}^{n+1} = \frac{4}{3}\underline{v}^n - \frac{1}{3}\underline{v}^{n-1} + \frac{2}{3}\Delta t \underline{f}(\underline{v}^{n+1}, t^{n+1})$$

(3.30)

Legal

Is this method explicit or implicit?

[Terms of Service & Honor Code](#)

[Privacy Policy](#)

☐ explicit

[Accessibility Policy](#)

[Trademark Policy](#)

☒ implicit

[Sitemap](#)

[Cookie Policy](#)

[Your Privacy Choices](#)

Consider the following method:

Connect

$$\underline{a} = \Delta t \underline{f}(\underline{v}^n, t^n)$$

(3.31)

[Idea Hub](#)

[Contact Us](#)

[Help Center](#)

[Security](#)

$$\underline{b} = \Delta t \underline{f}(\underline{v}^n + \underline{a}/2, t^n + \Delta t/2)$$

$$\underline{v}^{n+1} = \underline{v}^n + \underline{b}$$

Is this method explicit or implicit?

Discussions

All posts sorted by recent activity

[Media Kit](#)

Previous

Next



© 2023 edX LLC. All rights reserved.
深圳市恒宇博科技有限公司 [粤ICP备17044299号-2](#)

SOLUTION: The solution will be available shortly after the due date