5.1.6 Exam: Constructing A and b

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Exams due Aug 30, 2023 05:00 IST Completed

Problem: Find A and b

3.0/3.0 points (graded)

An Initial Value Problem is governed by the following two equations:

$$\frac{\mathrm{d}u_0}{\mathrm{d}t} = 5\left(u_1 - u_0\right) + 3\left(2 - u_0\right) + 10 \tag{5.8}$$

$$\frac{\mathrm{d}u_1}{\mathrm{d}t} = 4\left(u_0 - u_1\right) + 10\left(1 - u_1\right) + 2 \tag{5.9}$$

Use our standard notation for an IVP governed by a linear system,

$$\frac{\mathrm{d}\underline{u}}{\mathrm{d}t} = A\underline{u} + \underline{b} \tag{5.10}$$

What is the value of $A_{0,0}$:

- -14
- -8 ✔
- 2
- 4
- 5
- 10
- 12
- 16

What is the value of $A_{0,1}$:

- -14
- -8
- 2
- 4
- 5 ✔
- 10
- 12
- 16

What is the value of b_0:

- -14
- -8
- 2
- 4
- 5
- 10
- 12
- 16

What is the value of $A_{1,0}$:

- -14
- -8
- 2
- 4
- 5
- 10
- 12
- 16

What is the value of $A_{1,1}$:

- -14
- -8
- 2
- 4
- 5
- 10

- 12
- 16

✔

What is the value of b_1:

- -14
- -8
- 2
- 4
- 5
- 10
- 12 (selected)
- 16

✔

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Answers are displayed within the problem

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