Graded Quiz # 1

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Graded Quiz: MCQ part

5 points possible (graded)

Please write below your BracU ID and Sectoion number. After submission these may shows WRONG answers. Please IGNORE these messeges. Your score will be based on the questions belwo these two inputs:

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Your BracU ID#:

19101376

Your theory class section#

- [ ] 1
- [ ] 2
- [ ] 3
- [ ] 4
- [x] 5
- [ ] 6

MCQs start from below. Answer the questions correctly:

=====

Q#1: A function $f(x)$ has values $1,\ 1.8221,\ 3.3201,\ 6.0496$ at the nodes $0,\ 0.6,\ 1.2,\ 1.8$ respectively. The Vadermonde matrix for a linear polynomial passing through $(0, 1)$ and $0.6, 1.8221)$ will be

- ○ $\begin{pmatrix} 1 & -1.667 \\ 0 & -1.667 \end{pmatrix}$
- ○ $\begin{pmatrix} 1 & 0 \\ 0.6 & 1 \end{pmatrix}$
- ○ $\begin{pmatrix} 0 & 1 \\ 0.6 & 1 \end{pmatrix}$
- ◉ $\begin{pmatrix} 1 & 0 \\ 1 & 0.6 \end{pmatrix}$

Q#2: A function $f(x)$ is to be interpolated by a linear polynomial $p_1(x)$. The polynomial passes through the points $(0, 1)$ and $(0.6, 1.8221)$. What is the inverse of the Vandermonde matrix V?

- ○ $\begin{pmatrix} 0 & 1 \\ 0.6 & 1.6667 \end{pmatrix}$

- ○ $\begin{pmatrix} 1 & 0 \\ 1 & 0.6 \end{pmatrix}$
- ○ $\begin{pmatrix} 1 & -1.667 \\ 0 & -1.667 \end{pmatrix}$
- ◉ $\begin{pmatrix} 1 & 0 \\ -1.6667 & 1.6667 \end{pmatrix}$

Q#3: In Question-2 above, find the values of a_0 and a_1.

- ◉ $a_0 = 1,\ a_1 = 1.3702.$
- ○ $a_0 = 1,\ a_1 = 1.8221.$
- ○ $a_0 = 0,\ a_1 = 1.$
- ○ $a_0 = a_1 = 1.3702.$

Submit You have used 0 of 2 attempts

Save

Q#4: In the previous questions, you have computed the coefficients, a_0 and a_1 of the linear polynomial that passes the points $(0, 1)$ and $(0.6, 1.8221)$. Using these results, compute the following:

1. [1 points] Write down the linear polynomial $p_1(x)$.
2. [2 points] Compute $p_1(0.75)$.
3. [2 points] If $f(x) = e^x$, find the error $|f(x) - p_1(x)|$ at $x = 0.75$.
4. [2 point] If we would like to reduce the error in the previous part, what we need to do.

Upload your detail solution of Question-4 below in a single .pdf or .jpg file.

SUBMISSION OF Q#4 SOLUTION

Assignment submissions will close soon. To receive a grade, first provide a response to the prompt, then complete the steps below the **Your Response** field.

IN PROGRESS

▾ 1 Your Response due Jun 29, 2021 21:00 +06 (in 2 hours, 25 minutes)

Enter your response to the prompt. You can save your progress and return to complete your response at any time before the due date (Tuesday, Jun 29, 2021 21:00 +06). **After you submit your response, you cannot edit it**.

The prompt for this section

Instruction for Submission:

- Below is the submission link to upload your detail work for Problem Solving.
- Prepare the detail solution including your Name, BracU ID and Section #, in a single .pdf file or a single jpg file, and when finished upload your work/solution below, and then click the Upload File button.
- Finally click `Submit your Response and Move to the next step' to complete the submission.
- Click `End My Exam' at the top.
- If uploading fails, take a screen shot of your attempted uploading try. Email your file to our section teacher including the screen shot before the time runs out. No submission will be accepted without the screen shot and the email must be sent before the deadline.

Choose Files No file chosen Upload files

You may continue to work on your response until you submit it.

Submit your response and move to the next step

NOT AVAILABLE

2 Staff Grade

▸ Your Grade: Not Started

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