**CS2150L Quiz #3**

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| First Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Last Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
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* You **may** utilize search engines (such as Google) to search for information.
* You **may** use any previous or future Lab handouts.
* You **may** ask other classmates, using any means of communication, any questions during the quiz.

1. You are given the following table containing two points of a function *f*.

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  |  |  |

Give a polynomial in Lagrange form that would approximate *f* based on the table above. How many roots will the polynomial have? [10]

1. You are given the following table containing three points of a function *f*.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  | 10 |
|  |  |  | 56 |

Create a table of divided difference from the table above. [10]

1. From the table created in 2 give a polynomial in newton form that would approximate *f* based on the table above. [5]

4. [Bonus] Observing the table in 2 can you suggest better ways to create a table such the corresponding approximation form those tables would be better than we have in 3?