**CS2150L Quiz #4**

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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 three points of a function *f*.

|  |  |
| --- | --- |
|  |  |
| 10 | 50 |
| 20 | 150 |
| 30 | 250 |
| 40 | 400 |
| 50 | 450 |

Create a table of divided difference from the table above. Show work. [15]

1. What will be the Lagrange polynomial for using the table above? [10]
2. Suppose you’re given the following two approximation formulae for finding first derivative of a function *f(x)*. Briefly justify which one of these would you choose for your calculation and why. [5]

4. [Bonus] In the following plot you can find five points for. Draw a curve on the plot that would be a good representation of the polynomial you found in question 2. [5]