Math 1552
Spring 2019
Quiz 1 4:30
January 17, 2019
Time Limit: 15 Minutes

Name (Print): _____

Canvas email: _____

Teaching Assistant/Section: _____

GT ID:

By signing here, you agree to abide by the **Georgia Tech Honor Code**: *I commit to uphold the ideals of honor and integrity by refusing to betray the trust bestowed upon me as a member of the Georgia Tech Community.*

Sign Your Name: _____

This quiz contains 2 pages (including this cover page) and 3 problems. Check to see if any pages are missing. Enter all requested information on the top of this page.

You may *not* use your books, notes, or any calculator on this quiz.

You are required to show your work on each problem on this quiz. The following rules apply:

- **If you use a "fundamental theorem" you must indicate this** and explain why the theorem may be applied.
- **Organize your work**, in a reasonably neat and coherent way, in the space provided. Work scattered all over the page without a clear ordering will receive very little credit.
- **Mysterious or unsupported answers will not receive full credit**. A correct answer, unsupported by calculations, explanation, or algebraic work will receive no credit; an incorrect answer supported by substantially correct calculations and explanations might still receive partial credit.
- Please circle or box in your final answer.

Problem	Points	Score
1	6	
2	2	
3	2	
Total:	10	

1. Estimate the area under the graph of $f(x) = x^3 + 2$ on the interval $[-1, 3]$ using $n = 2$ equal subintervals by using:

   (a) (2 points) the lower sum L_f $[-1,1]$ $[1,3]$

$L_f = 2(f(-1) + f(1))$ } +1

$= 2(1 + 3) = 8$ } +1

   (b) (2 points) the upper sum U_f

$U_f = 2(f(1) + f(3))$ } +1

$= 2(3 + 29) = 64$ } +1

   (c) (2 points) the midpoint rule

$M_f = 2(f(0) + f(2))$ } +1

$= 2(2 + 10) = 24$ } +1

2. (2 points) Using your answer from problem 1(a), estimate the average value of $f(x)$ on $[-1, 3]$.

$AV \approx \dfrac{\frac{L_f}{b-a}}{+1} = \dfrac{\frac{8}{4}}{+1} = 2$

3. (2 points) Use $\sum_{i=1}^{n} a_i = 11$ $\sum_{i=1}^{n} b_i = 6$ to evaluate the following:

$\sum_{i=1}^{n}(b_i + 4a_i) = \underbrace{\sum b_i + 4\sum a_i}_{+1} = \underbrace{50}_{+1}$