MAT 132 **Name (Print):** _____
Summer II 2019
Quiz 2
07/24/19
Time Limit: 50 minutes ID number _____

Instructions

- This exam contains 7 pages (including this cover page) and 5 problems. Check to see if any pages are missing. Enter all requested information on the top of this page, and put your initials on the top of every page, in case the pages become separated.
- You may *not* use your books, notes, or any device that is capable of accessing the internet on this exam (e.g., smartphones, smartwatches, tablets). You may use a calculator.
- **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**.

Problem	Points	Score
1	6	
2	3	
3	4	
4	4	
5	3	
Total:	20	

1. This problem aims to estimate the area under the curve $y = e^x/x$, for $1 \leq x \leq 4$.

   (a) (2 points) Estimate using the midpoint rule with $n = 4$.

   (b) (2 points) Estimate using the trapezoidal rule with $n = 4$.

(c) (2 points) Estimate using Simpson's rule with $n = 4$.

2. (3 points) Determine whether the integral is divergent or convergent. If the integral converges, compute its value.

$$\int_2^3 \frac{1}{\sqrt{3-x}}\, dx$$

3. (4 points) Find the area of the region enclosed by the curves

$$f(x) = \cos(x)$$

and

$$g(x) = 2 - \cos(x),$$

for $0 \leq x \leq 2\pi$.

4. (4 points) The region bounded by the curves

$$y = \sqrt{x}$$
$$y = x^2,$$

is rotated about the y-axis. Find the volume of the resulting solid.

5. (3 points) Find the exact length of the arc of the curve

$$y = x^{\frac{3}{2}}$$

bounded between $1 \leq x \leq 2$.