Math 106Q Spring 2007 Quiz 9

Instruction: Read each question carefully. Write **all** your works in the space provided. You won't get full credits even when your answer is right without your works all written down. You may use the back of the paper to continue your work. If you do so, write "continued on next page" or so to indicate that that is not the end of your solution. Calculators, computers, cell phones may not be used. Books are not allowed in the exam. You will have 10 minutes total.

Name:.....

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Find the average value of each of

$$f(x) = e^x + \frac{1}{x}$$

on the interval $[2, 3]$ (5 points)

SOLUTION: $a = 2$ and $b = 3$. Thus,

$$\begin{aligned}
\text{average value} &= \frac{1}{3-2}\int_2^3 e^x + \frac{1}{x}dx \\
&= \frac{1}{1}\int_2^3 e^x + \frac{1}{x}dx \\
&= \Big[e^x + \ln|x|\Big]_2^3 \\
&= \Big(e^3 + \ln 3\Big) - \Big(e^2 + \ln 2\Big) \\
&= 13.1
\end{aligned}$$