ECN 5320/6320

HW 1
Fall 2022
100 pts.

Name:_____
A-Number:_____

Instructions: write derivations and answers to the assignment on separate pieces of paper. Write neatly and clearly!

1. Calculate $\int 9x^{1/3}dx$. **(5 points)**

2. Calculate $\int_1^2 y^{-1}\ dy$. **(5 points)**

3. Calculate $\int_a^b 1\ dt$. **(5 points)**

4. Calculate $\int b^{2\tau}\ d\tau$. **(5 points)**

5. Calculate $\int_a^b re^{-rt}\ dt$. **(5 points)**

6. Calculate $\int \frac{1}{1+\beta\tau}\ d\tau$. **(10 points)**

7. Calculate $\int x(x+1)^{1/2}\ dx$. **(10 points)**

8. Rewrite via integration by parts and then calculate $\int t^2 \exp[at]\ dt$. **(20 points)**

9. Rewrite via integration by parts and then calculate $\int_1^b x\ln[x]\ dx$. **(20 points)**

10. Calculate the derivative $\dfrac{\partial V}{\partial x}$ of $V = \int_a^{5x} t^2\ln[x]\ dt$. **(15 points)**

Scan your derivations into a single pdf file and upload it to Canvas by **Monday 9/26/2022 at 11:59pm**.