

Quiz 4

Name \_\_\_\_\_

*Vey*

Recitation (Circle)

1:30P

2:30P

3:30P

4:30P

Use the techniques learned in class to do the following problems and show your work!!!

Problem 1: (4 points) Integrate!

$$\int_0^1 \frac{1}{x+1} + e^x dx$$

$$\int \frac{1}{x+1} + e^x dx = \int \frac{1}{x+1} dx + \int e^x dx$$

$$\begin{array}{l} u=x+1 \\ du=dx \end{array} \rightarrow \int \frac{1}{u} du = \ln|u| = e^x$$

$$= [\ln|x+1| + e^x]_0^1$$

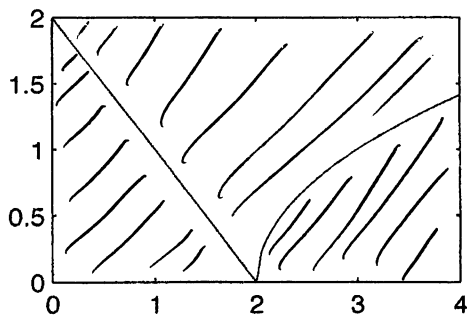
$$= (\ln(2) + e) - (\ln(1) + 1)$$

$$= \ln(2) + e - 1.$$

Problem 2: (6 points)

Set up, but *do not evaluate* the integral(s) for the area of the figure below, bounded by  $y = 2 - x$ ,  $\sqrt{x - 2}$ ,  $x = 0$  and  $x = 4$ .

$$\int_0^2 2-x dx + \int_2^4 \sqrt{x-2} dx$$



$$\int_0^2 2 - (2-x) dx + \int_2^4 2 - \sqrt{x-2} dx$$

I wanted the black shaded region, but accepted the red if done correctly.