

"QUIZ" for Lecture 13

NAME: (print!) Yongshan Li Section:23

E-MAIL SCANNED .pdf OF COMPLETED QUIZ to DrZcalc3@gmail.com (Attachment: q13FirstLast.pdf) ASAP BUT NO LATER THAN Oct. 22, 8:00pm

1. Change the order of integration in

$$Z 1 \rightarrow 4 \quad Z 0 \rightarrow \ln y \quad f(x, y) \, dx \, dy .$$

The image shows a handwritten solution on a calendar page. The original integral is $\int_1^4 \int_0^{\ln y} f(x, y) \, dx \, dy$. The student identifies the region by the equations $x = \ln y$ and $y = e^x$. The new integral is written as $\int_{e^x}^4 \int_0^{\ln 4} f(x, y) \, dx \, dy$. The final answer is $\int_0^{\ln 4} \int_{e^x}^4 f(x, y) \, dy \, dx$.

2. Evaluate

$$Z 0 \rightarrow 2 \quad Z y/2 \rightarrow 1 \quad 1/(x^2 + 1)^2 \, dx \, dy ,$$

by inverting the order of integration and evaluating the new iterated integral.

The image shows a handwritten solution on a calendar page. The original integral is $\int_0^2 \int_{y/2}^1 \frac{1}{(x^2+1)^2} \, dx \, dy$. The student identifies the region by the equations $x = y/2$ and $y = 2x$. The new integral is written as $\int_0^{2x} \int_0^1 \frac{1}{(x^2+1)^2} \, dx \, dy$. The final answer is $\int_0^1 \frac{2x}{(x^2+1)^2} \, dx$.