"QUIZ" for Lecture 13

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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

$$\int_1^4 \int_0^{\ln y} f(x,y)\,dx\,dy \quad .$$

$X = \ln(y) \rightarrow y = e^x$

$$\int_0^{\ln(4)} \int_{e^x}^{4} f(x,y)\,dy\,dx$$

2. Evaluate

$$\int_0^2 \int_{y/2}^1 \frac{1}{(x^2+1)^2}\,dx\,dy \quad ,$$

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

inverted integral: $\int_0^1 \int_0^{2x} \frac{1}{(x^2+1)^2}\,dy\,dx = \frac{1}{2}$

$\int_0^{2x} \frac{1}{(x^2+1)^2}\,dy = \frac{2x}{(x^2+1)^2}$ $\int_0^1 \frac{2x}{(x^2+1)^2}\,dx = \frac{1}{2}$