"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

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

$\rightarrow D = \{(x,y) \mid 1 \le y \le 4,\ 0 \le x \le \ln(y)\}$

$\rightarrow D = \{(x,y) \mid 0 \le x \le \ln(4),\ e^x \le y \le 4\}$

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

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.

$\rightarrow D = \{(x,y) \mid 0 \le y \le 2,\ \frac{y}{2} \le x \le 1\}$

$\rightarrow D = \{(x,y) \mid 0 \le x \le 1,\ 0 \le y \le 2x\}$

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

$\rightarrow \boxed{\frac{1}{2}}$