No.

Date

Quiz 13

Q1. change the order of integration in

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

$D: \{(x,y) \mid 1 \le y \le 4 \quad 0 \le x \le \ln y\}$.

$x = \ln y \qquad y = e^x$

$\therefore$ when $y=1 \quad x=0 \qquad 0 \le x \le \ln 4$

$y=4 \quad x=\ln 4 \qquad 1 \le y \le 4$

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

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

Q2. $\int_0^2 \int_{\frac{y}{2}}^1 \frac{1}{(x^2+1)^2}\,dx\,dy$

$0 \le y \le 2$

$\frac{y}{2} \le x \le 1$

$x = \frac{y}{2}$

$y = 2x$

$\therefore 0 \le y \le 2x$

$\because 0 \le x \le 1$

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

$= \frac{1}{2}$

KOKUYO