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

$1 \le y \le 4$, $0 \le x \le \ln y$

$0 \le x \le \ln 4$, $e^x \le y \le 4$

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

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

$\frac{y}{2} \le x \le 1$, $0 \le y \le 2$

$0 \le x \le 2$, $0 \le y \le 2x$

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