

$$1) \int_0^1 \int_0^{1-y} f(x,y) dx dy$$

$$D = (x,y) \mid 0 \leq x \leq 1, 0 \leq y \leq 1-y$$

$$0 \leq x \leq 1-y \quad 0 \leq y \leq 1 \quad \int_0^1 \int_0^{1-y} f dx dy$$

$$0 \leq x \leq 1-y \quad 0 \leq y \leq 1 \quad \int_0^{1-y} \int_0^y f dy dx$$

$$2) \int_0^1 \int_0^{1-x} e^{x+y} dy dx = \int_0^1 \int_0^{1-x} e^y e^x dy dx$$

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

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