
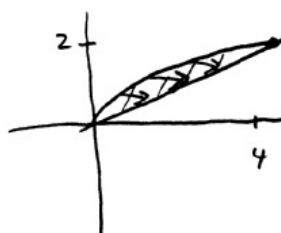


1. Evaluate  $\iint_R e^{(y^2)} dA$ , where  $R$  is the triangular region with vertices  $(0, 0)$ ,  $(1, 1)$ , and  $(0, 1)$ .


$$\int_0^1 \int_0^y e^{y^2} dx dy = \int_0^1 x e^{y^2} \Big|_{x=0}^y dy = \int_0^1 y e^{y^2} dy$$
$$= \frac{1}{2} e^{y^2} \Big|_0^1 = \frac{1}{2}(e-1)$$

Note:  $\int_0^1 \int_x^1 e^{y^2} dy dx$  is correct, but you cannot evaluate the inner integral.

2. Reverse the order of integration in


$$\int_0^4 \int_{x/2}^{\sqrt{x}} f(x, y) dy dx.$$

$y = x/2 \leftrightarrow x = 2y$   
 $y = \sqrt{x} \leftrightarrow x = y^2$

$$= \int_0^2 \int_{y^2}^{2y} f(x, y) dx dy$$