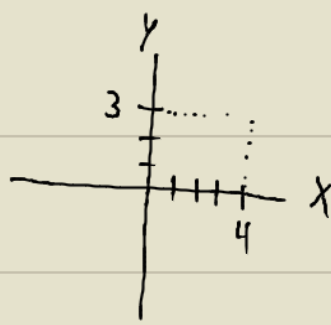


$$1. \quad p(x, y) = xy$$

$$0 \leq x \leq 4 \quad 0 \leq y \leq 3$$



$$\int_{x=0}^{x=4} \int_{y=0}^{y=3} (xy) \, dy \, dx$$

$$= \int_{x=0}^{x=4} \left[ \frac{1}{2}xy^2 \right]_{y=0}^{y=3} dx$$

$$= \int_{x=0}^{x=4} \left[ \frac{1}{2}x(3)^2 - \frac{1}{2}x(0)^2 \right] dx$$

$$= \frac{9}{2} \int_{x=0}^{x=4} x \, dx$$

$$= \frac{9}{2} \left[ \frac{1}{2}x^2 \right]_{x=0}^{x=4}$$

$$= \frac{9}{2} \cdot \frac{1}{2} [4^2 - 0^2]$$

$$= \frac{9}{4} \cdot 16$$

$$= \textcircled{36}$$