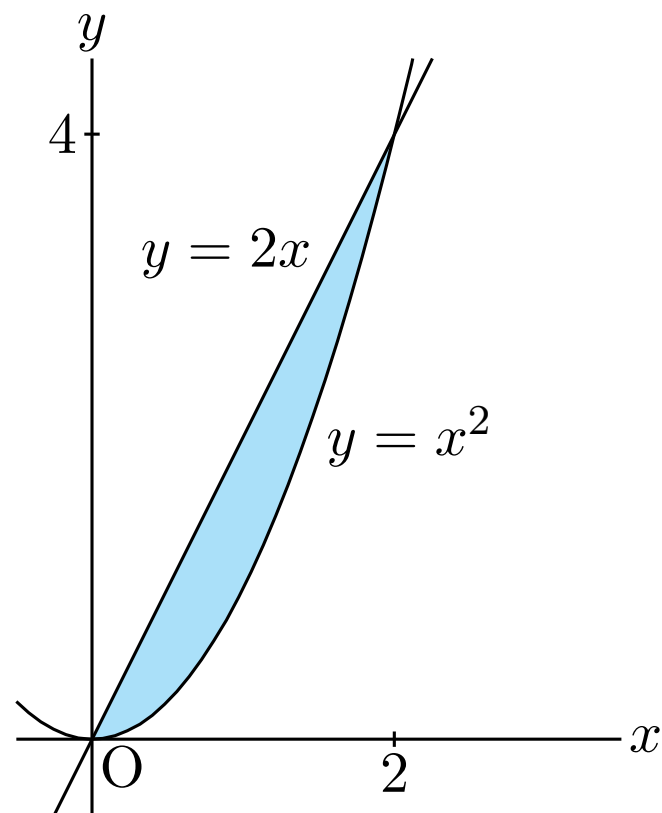


D は図の通りで、次の不等式で表される.

$$0 \leq x \leq 2, \quad x^2 \leq y \leq 2x$$

$$\begin{aligned} & \iint_D xy \, dx dy \\ &= \int_0^2 \left\{ \int_{x^2}^{2x} xy \, dy \right\} dx \end{aligned}$$



$$= \int_0^2 x \left[\frac{y^2}{2} \right]_{x^2}^{2x} dx$$

$$= \frac{1}{2} \int_0^2 (4x^3 - x^5) dx = \frac{1}{2} \left[x^4 - \frac{x^6}{6} \right]_0^2 = \frac{8}{3}$$