

$$\iiint_V x dv = \iint_D \left(x \int_0^{2-2x-2y} dz \right) d\sigma = \iint_D x(2-2x-2y) d\sigma =$$

określamy granice całkowania i obliczamy całkę względem y

$$\begin{aligned} &= \iint_D (2x - 2x^2 - 2xy) d\sigma = \int_0^1 \left(\int_0^{1-x} (2x - 2x^2 - 2xy) dy \right) dx = \\ &= \int_0^1 \left[2xy - 2x^2y - xy^2 \right]_{y=0}^{y=1-x} dx = \\ &= \int_0^1 (2x(1-x) - 2x^2(1-x) - x(1-x)^2) dx = \end{aligned}$$

w końcu obliczamy całkę względem x

$$\begin{aligned} &= \int_0^1 (x^3 - 2x^2 + x) dx = \left[\frac{1}{4}x^4 - \frac{2}{3}x^3 + \frac{1}{2}x^2 \right]_0^1 = \\ &= \frac{1}{4} - \frac{2}{3} + \frac{1}{2} = \frac{1}{12} \end{aligned}$$

(1)