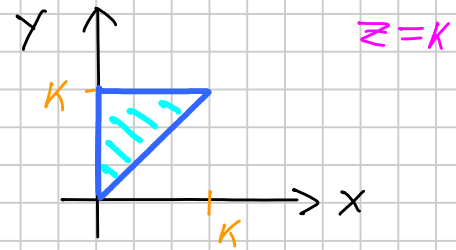
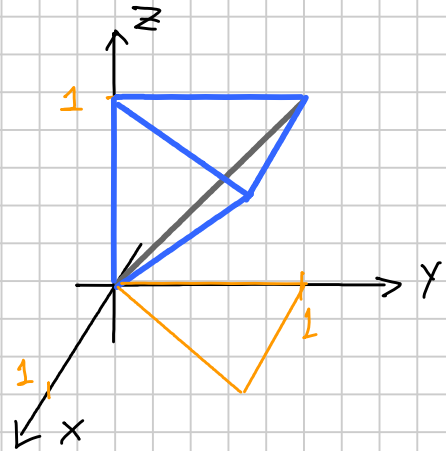


$$\begin{cases} \Omega : 0 \leq x \leq y \leq z \leq 1 \\ \vec{v} = (x^2, y^2, z^2) \end{cases}$$



$$\int_{\partial\Omega} \vec{v} \cdot \vec{n} \, d\sigma = \int_{\Omega} \operatorname{div} \vec{v} \, dx \, dy \, dz$$

$$\operatorname{div} \vec{v} = 2x + 2y + 2z$$



$$\int_{\Omega} \operatorname{div} \vec{v} \, dx \, dy \, dz = \int_0^1 \int_0^z \int_0^y (2x + 2y + 2z) \, dx \, dy \, dz =$$

$$= 2 \int_0^1 \int_0^z \left[\frac{x^2}{2} + xy + xz \right]_0^y \, dy \, dz = 2 \int_0^1 \int_0^z \left(\frac{y^2}{2} + y^2 + yz \right) \, dy \, dz =$$

$$= 2 \int_0^1 \left[\frac{y^3}{2} + \frac{y^2}{2} z \right]_0^z \, dz = 2 \int_0^1 \frac{z^3}{2} + \frac{z^3}{2} \, dz = 2 \left[\frac{z^5}{5} \right]_0^1 = \frac{1}{2}$$