

TEST 7-3

Nech σ_{xy} je elementárna oblasť vzhľadom na os O_x určená takto:

$$\sigma_{xy} = \{(x, y) \mid a \leq x \leq b, \varphi(x) \leq y \leq \psi(x)\},$$

ω_{xyz} .

$$\omega_{xyz} = \{(x, y, z) \in \mathbf{R}^3 \mid a \leq x \leq b, \varphi(x) \leq y \leq \psi(x), f_1(x, y) \leq z \leq f_2(x, y)\}.$$

Potom

$$\iiint_{\omega_{xyz}} f(x, y, z) dx dy dz =$$

1.

$$\iint_{\sigma_{xy}} \left[\int_{f_1(x, y)}^{f_2(x, y)} f(x, y, z) dz \right] dx dy =$$

2.

$$= \int_a^b \left\{ \int_{\varphi(x)}^{\psi(x)} \left[\int_{f_1(x, y)}^{f_2(x, y)} f(x, y, z) dz \right] dy \right\} dx.$$