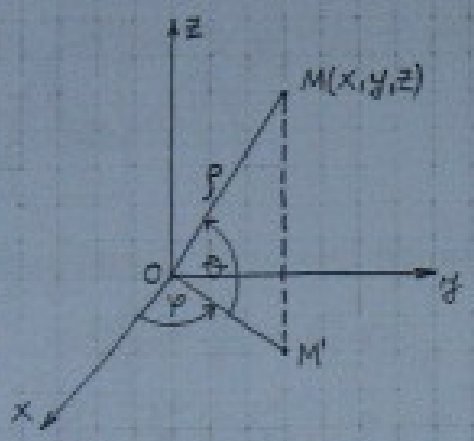
- ТРОСТРУКИ ИНТЕГРАЛИ -

$$\iiint_T F(x,y,z)\,dx\,dy\,dz = \int_{x_1}^{x_2} dx \int_{f_1(x)}^{f_2(x)} dy \int_{g_1(x,y)}^{g_2(x,y)} f(x,y,z)\,dz$$

- СФЕРНЕ КООРДИНАТЕ -



$$\boxed{V(T) = \iiint_T dx\,dy\,dz}$$

$$\begin{cases} x = \rho\cos\varphi\cdot\cos\theta \\ y = \rho\cdot\sin\varphi\cdot\cos\theta \\ z = \rho\cdot\sin\theta \end{cases}$$

$J = \rho^2\cdot\cos\theta$

$-\frac{\pi}{2} < \theta < \frac{\pi}{2}$

$x^2+y^2+z^2=\rho^2$

$dx\,dy\,dz = \rho^2\cos\theta\,d\rho\,d\theta\,d\varphi$

- Уопштење сферне координате:

$$\frac{x^2}{a^2}+\frac{y^2}{b^2}+\frac{z^2}{c^2}=1$$

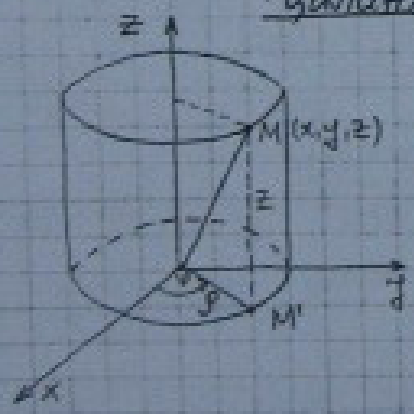
$\rho^2 = 1$

$\rho = 1$

$$\begin{cases} x = a\rho\cos\theta\cos\varphi \\ y = b\rho\sin\varphi\cdot\cos\theta \\ z = c\cdot\rho\cdot\sin\theta \end{cases}$$

$dx\,dy\,dz = abc\,\rho^2\cos\theta\,d\rho\,d\theta\,d\varphi$

-ЦИЛИНДРИЧНЕ КООРДИНАТЕ-



$$\boxed{V(T) = \iiint_T dx\,dy\,dz = \iint dx\,dy\cdot\int_{z_1}^{z_2} dz = \iint_D (z_2-z_1)\,dx\,dy}$$

$$\begin{cases} x = \rho\cos\varphi \\ y = \rho\sin\varphi \\ z = z \end{cases}$$

$J = \rho$

$0 \leq \varphi \leq 2\pi$

$dx\,dy\,dz = \rho\,d\rho\,d\varphi\,dz$