

Sféra S^2

$$g = r_0^2 (d\vartheta^2 + \sin^2 \vartheta d\varphi^2)$$

① Levi-Civita tensor
 $\epsilon = ?$

② $L_{\frac{\partial}{\partial \vartheta}} \epsilon = ?$ $L_{\frac{\partial}{\partial \varphi}} \epsilon = ?$

③ najděte $f(\vartheta)$ takové, aby

$$L_{f \frac{\partial}{\partial \vartheta}} \epsilon = 0 \quad f = ?$$

spočítejte

$$L_{f \frac{\partial}{\partial \vartheta}} g = ?$$

Sféra S^3

$$g = dx^2 + \sin^2 x (d\vartheta^2 + \sin^2 \vartheta d\varphi^2)$$

① $\epsilon = ?$ $*\epsilon = ?$

② $\alpha = f(x) \sin^2 x dx$

spočítejte

$$*d*\alpha = ?$$