

Vázaný extrém

$$f(x, y) = 3y + e^{-3x} - 2$$

$$M: y = 2x$$

$$I) h(x) = 6x + e^{-3x} - 2$$

$$II) h'(x) = 6 + e^{-3x} \cdot (-3) = 3(2 - e^{-3x})$$

$$III) \text{ Nulové body } 2 = e^{-3x}$$

$$2 = \frac{1}{e^{3x}} \quad | \cdot e^{3x}$$

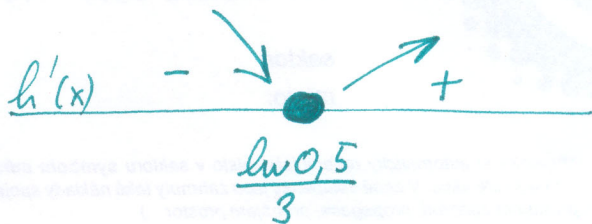
$$2e^{3x} = 1 \quad | :2$$

$$e^{3x} = \frac{1}{2} \quad | \ln$$

$$\ln e^{3x} = \ln \frac{1}{2}$$

$$3x = \ln 0,5 \quad | :3$$

$$x = \frac{\ln 0,5}{3}$$



V bodě $\left[\frac{\ln 0,5}{3}, \frac{2 \ln 0,5}{3} \right]$ je ostré lokální vázané minimum.