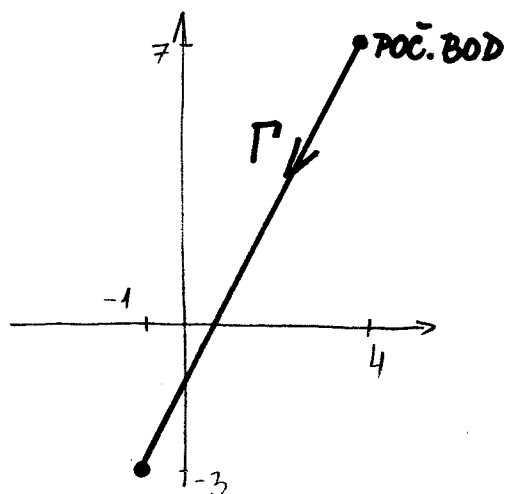


PŘ. Vypočítejte $\int_{\vec{\Gamma}} (7x, y) d\vec{s}$, Γ je dána explicitní rovnice

$y = 2x - 1$, $x \in \langle -1, 4 \rangle$ a bod $[4, 7]$ je počáteční bod.

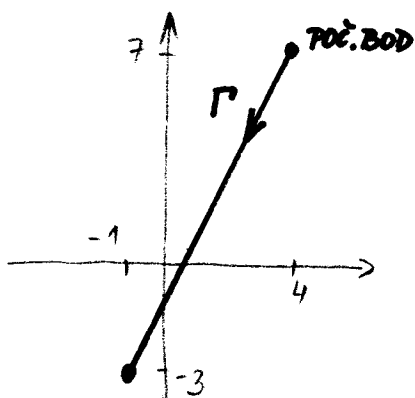


$$\int_{\vec{\Gamma}} (7x, y) d\vec{s} = \int_{\vec{\Gamma}} 7x dx + y dy \quad \begin{array}{l} y = 2x - 1, x \in \langle -1, 4 \rangle \\ dy = 2dx \end{array} \quad \Downarrow \quad \ominus$$

$$\begin{aligned} &= \ominus \int_{-1}^4 (7x dx + (2x-1) \cdot 2dx) = \\ &= \ominus \int_{-1}^4 (11x - 2) dx = \ominus \left[11 \frac{x^2}{2} - 2x \right]_{-1}^4 = \\ &= \ominus \left(11 \cdot \frac{4^2}{2} - 2 \cdot 4 - \left(11 \cdot \frac{(-1)^2}{2} - 2 \cdot (-1) \right) \right) = \ominus \frac{145}{2} = \underline{\underline{-72,5}} \end{aligned}$$

PŘ. Vypočítejte $\int_{\vec{\Gamma}} (7x, y) d\vec{s}$, Γ je dána parametrickými rovnici

$x = -1 + 5t$, $y = -3 + 10t$, $t \in \langle 0, 1 \rangle$ a bod $[4, 7]$ je počáteční bod.



$$\int_{\vec{\Gamma}} (7x, y) d\vec{s} = \int_{\vec{\Gamma}} 7x dx + y dy \quad \begin{array}{l} x = -1 + 5t \quad y = -3 + 10t \Rightarrow \ominus \\ dx = 5dt \quad dy = 10dt \end{array}$$

$$\begin{aligned} &= \ominus \int_0^1 (7(-1+5t) \cdot 5dt + (-3+10t) \cdot 10dt) dt = \\ &= \ominus \int_0^1 (-65 + 275t) dt = \ominus \left[-65t + 275 \frac{t^2}{2} \right]_0^1 = \\ &= \ominus \left(-65 \cdot 1 + 275 \cdot \frac{1^2}{2} - \left(-65 \cdot 0 + 275 \cdot \frac{0^2}{2} \right) \right) = \ominus \frac{145}{2} = \underline{\underline{-72,5}} \end{aligned}$$