Matematica applicata

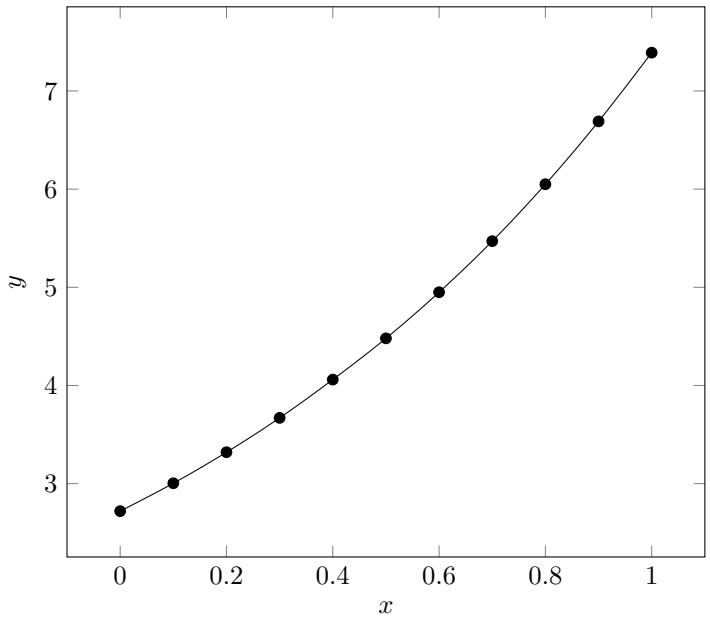
Esercitazione 2

Ollari Dmitri

9 novembre 2022

1 Esercizio 2 b

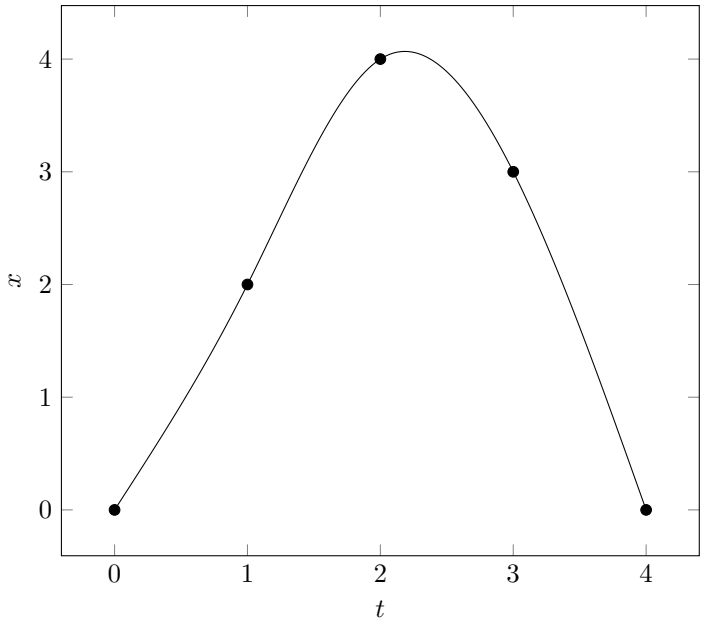
$$f(x) = \begin{cases} 6.8035 \cdot x^3 - 7.8020 \cdot 10^{-56} \cdot x^2 + 2.7720 \cdot x + 2.7200, & \text{if } x \in [0, 0.1], \\ -2.0174 \cdot x^3 + 2.6462 \cdot x^2 + 2.5073 \cdot x + 2.7288, & \text{if } x \in (0.1, 0.2], \\ 3.2659 \cdot x^3 - 5.2373 \cdot 10^{-1} \cdot x^2 + 3.1413 \cdot x + 2.6866, & \text{if } x \in (0.2, 0.3], \\ -5.0464 \cdot x^3 + 6.9574 \cdot x^2 + 8.9699 \cdot 10^{-1} \cdot x + 2.9110, & \text{if } x \in (0.3, 0.4], \\ 6.9198 \cdot x^3 - 7.4021 \cdot x^2 + 6.6408 \cdot x + 2.1452, & \text{if } x \in (0.4, 0.5], \\ -2.6327 \cdot x^3 + 6.9267 \cdot x^2 - 5.2359 \cdot 10^{-1} \cdot x + 3.3392, & \text{if } x \in (0.5, 0.6], \\ 3.6110 \cdot x^3 - 4.3120 \cdot x^2 + 6.2196 \cdot x + 1.9906, & \text{if } x \in (0.6, 0.7], \\ -1.8114 \cdot x^3 + 7.0751 \cdot x^2 - 1.7513 \cdot x + 3.8505, & \text{if } x \in (0.7, 0.8], \\ 3.6346 \cdot x^3 - 5.9953 \cdot x^2 + 8.7050 \cdot x + 1.0621, & \text{if } x \in (0.8, 0.9], \\ -1.2727 \cdot 10^1 \cdot x^3 + 3.8181 \cdot 10^1 \cdot x^2 - 3.1053 \cdot 10^1 \cdot x + 1.2990 \cdot 10^1, & \text{if } x \in (0.9, 1]. \end{cases}$$



2 Esercizio 3

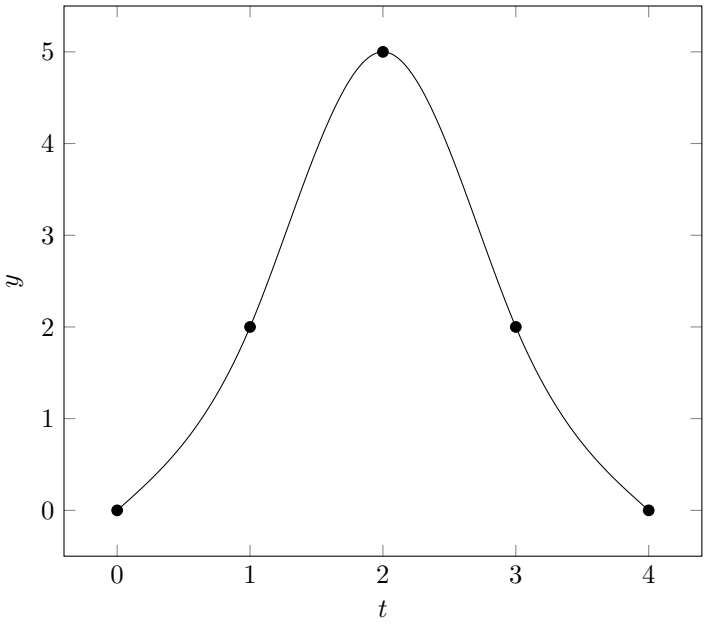
2.1 x rispetto a t

$$f(x) = \begin{cases} 1.7857 \cdot 10^{-1} \cdot x^3 - 7.2857 \cdot 10^{-62} \cdot x^2 + 1.8214 \cdot x + 0.0000, & \text{if } x \in [0, 1], \\ -8.9286 \cdot 10^{-1} \cdot x^3 + 3.2143 \cdot x^2 - 1.3929 \cdot x + 1.0714, & \text{if } x \in (1, 2], \\ 3.9286 \cdot 10^{-1} \cdot x^3 - 4.5000 \cdot x^2 + 1.4036 \cdot 10^1 \cdot x - 9.2143, & \text{if } x \in (2, 3], \\ 3.2143 \cdot 10^{-1} \cdot x^3 - 3.8571 \cdot x^2 + 1.2107 \cdot 10^1 \cdot x - 7.2857, & \text{if } x \in (3, 4]. \end{cases}$$



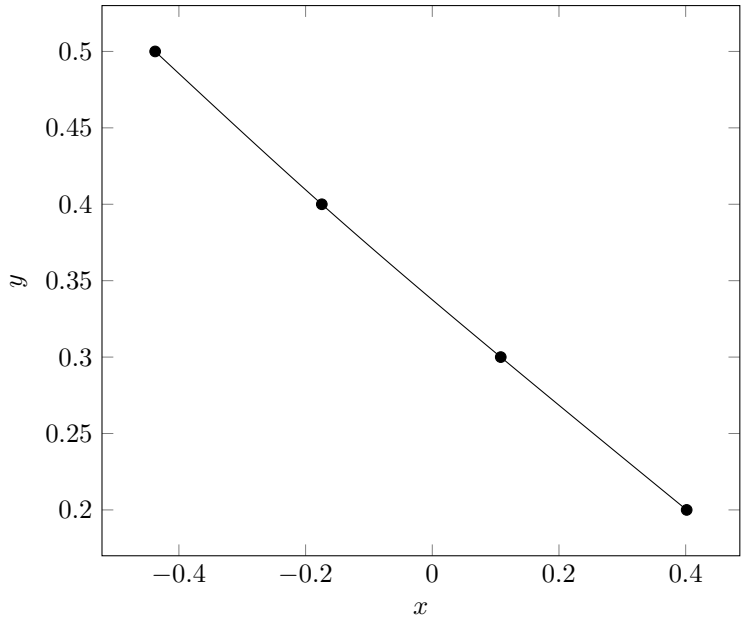
2.2 y rispetto a t

$$f(x) = \begin{cases} 7.1429 \cdot 10^{-1} \cdot x^3 + 3.0857 \cdot 10^{-61} \cdot x^2 + 1.2857 \cdot x + 0.0000, & \text{if } x \in [0, 1], \\ -2.5714 \cdot x^3 + 9.8571 \cdot x^2 - 8.5714 \cdot x + 3.2857, & \text{if } x \in (1, 2], \\ 2.5714 \cdot x^3 - 2.1000 \cdot 10^1 \cdot x^2 + 5.3143 \cdot 10^1 \cdot x - 3.7857 \cdot 10^1, & \text{if } x \in (2, 3], \\ -7.1429 \cdot 10^{-1} \cdot x^3 + 8.5714 \cdot x^2 - 3.5571 \cdot 10^1 \cdot x + 5.0857 \cdot 10^1, & \text{if } x \in (3, 4]. \end{cases}$$



3 Esercizio 4

$$f(x) = \begin{cases} 8.4978 \cdot 10^{-2} \cdot x^3 + 1.1153 \cdot 10^{-1} \cdot x^2 - 3.3717 \cdot 10^{-1} \cdot x + 3.3826 \cdot 10^{-1}, & \text{if } x \in [-0.4375, -0.1744], \\ -5.7785 \cdot 10^{-2} \cdot x^3 + 3.6840 \cdot 10^{-2} \cdot x^2 - 3.5020 \cdot 10^{-1} \cdot x + 3.3750 \cdot 10^{-1}, & \text{if } x \in (-0.1744, 0.1081], \\ -2.0557 \cdot 10^{-2} \cdot x^3 + 2.4768 \cdot 10^{-2} \cdot x^2 - 3.4889 \cdot 10^{-1} \cdot x + 3.3745 \cdot 10^{-1}, & \text{if } x \in (0.1081, 0.4016]. \end{cases}$$



Lo zero si ottiene in:

$$f(0) = 3.3750 \cdot 10^{-1} \tag{1}$$