

ORIGIN := 0

$$a := 0$$

$$b := 2$$

$$n := 10$$

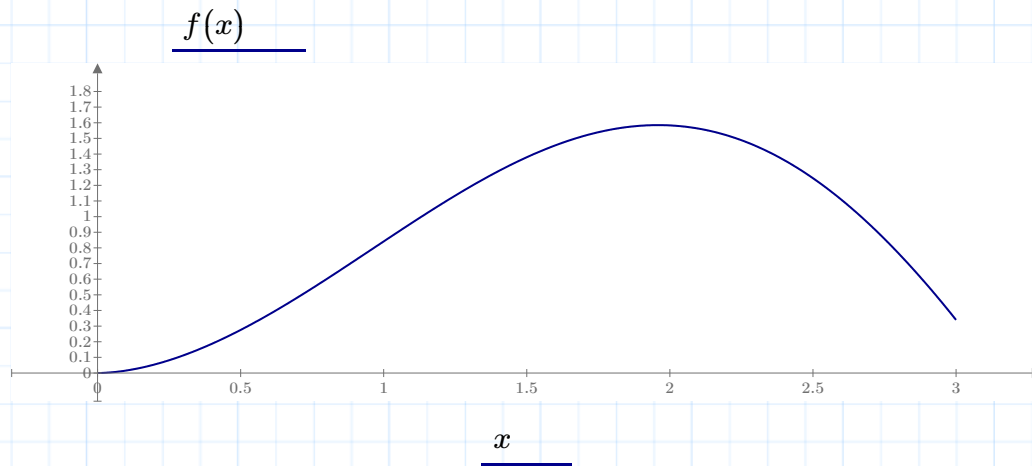
$$\Delta := \frac{b-a}{n} = 0.2$$

$$f(x) := x^{0.8} \cdot \sin(x)$$

$$i := 0 \dots n$$

$$y_i := f(a + i \cdot \Delta)$$

$$C_A := \int_a^b f(x) dx = 1.64696 \quad \text{<----- Wzór analityczny}$$



$$y = \begin{bmatrix} 0.00000 \\ 0.05482 \\ 0.18710 \\ 0.37523 \\ 0.60008 \\ 0.84147 \\ 1.07840 \\ 1.28984 \\ 1.45583 \\ 1.55851 \\ 1.58318 \end{bmatrix}$$

Wzór Simpsona ---->

$$C_S = \frac{\Delta}{3} \left[f_0 + f_n + 4 \left(\sum_{i=1,3..n-1} f_i \right) + 2 \left(\sum_{j=2,4..n-2} f_j \right) \right]$$

$$i := 1, 3 \dots n-1$$

$$j := 2, 4 \dots n-2$$

$$C_S := \frac{\Delta}{3} \left(y_0 + y_n + 4 \sum_i y_i + 2 \sum_j y_j \right)$$

$$C_S = 1.64703$$