Bogdan Chwaliæski

Zestaw 4 Zadanie 6

Utworzono wielomian interpolacyjny oparty na tabelce z zadania 6N z zestawu 4.

In[1]:= $x_0 = -1.2300; \quad y_0 = 1.5129;$
$x_1 = -1.1900; \quad y_1 = 1.4161;$
$x_2 = -0.7400; \quad y_2 = 0.5476;$
$x_3 = 0.1100; \quad y_3 = 0.0121;$
$x_4 = 2.5600; \quad y_4 = 6.5536;$

In[6]:= $\text{fwi}[t\_] := N\Big[y_0 \dfrac{(t - x_1)(t - x_2)(t - x_3)(t - x_4)}{(x_0 - x_1)(x_0 - x_2)(x_0 - x_3)(x_0 - x_4)} +$

$\qquad y_1 \dfrac{(t - x_0)(t - x_2)(t - x_3)(t - x_4)}{(x_1 - x_0)(x_1 - x_2)(x_1 - x_3)(x_1 - x_4)} +$

$\qquad y_2 \dfrac{(t - x_0)(t - x_1)(t - x_3)}{(x_2 - x_0)(x_2 - x_1)(x_2 - x_3)(x_2 - x_4)} +$

$\qquad y_3 \dfrac{(t - x_0)(t - x_1)(t - x_2)(t - x_4)}{(x_3 - x_0)(x_3 - x_1)(x_3 - x_2)(x_3 - x_4)} +$

$\qquad y_4 \dfrac{(t - x_0)(t - x_1)(t - x_2)(t - x_3)}{(x_4 - x_0)(x_4 - x_1)(x_4 - x_2)(x_4 - x_3)}$

$\qquad \Big];$

In[15]:= **fwi[t]**

Out[15]= $15.1988 \, (-2.56 + t)(-0.11 + t)(0.74 + t)(1.19 + t) -$
$16.1379 \, (-2.56 + t)(-0.11 + t)(0.74 + t)(1.23 + t) +$
$0.885364 \, (-0.11 + t)(1.19 + t)(1.23 + t) -$
$0.00333543 \, (-2.56 + t)(0.74 + t)(1.19 + t)(1.23 + t) +$
$0.0570334 \, (-0.11 + t)(0.74 + t)(1.19 + t)(1.23 + t)$

In[16]:= **Print["Jawne współczynniki wielomianu:"];**
Expand[fwi[t]]

Jawne współczynniki wielomianu:

Out[17]= $-0.507477 + 3.91695 \, t + 7.22066 \, t^2 + 1.10671 \, t^3 - 0.885364 \, t^4$