Zad. 4_1 / Zestaw 1

x_i	0,1	0,3	0,6	0,8
y_i	-1	1,2	1	1,5

$$WN_3(x) = y_0 + f(x_0,x_1)\cdot(x-x_0) + f(x_0,x_1,x_2)(x-x_0)(x-x_1) + f(x_0,x_1,x_2,x_3)(x-x_0)(x-x_1)(x-x_2)$$

$$f(x_0,x_1) = \frac{y_1-y_0}{x_1-x_0} = \frac{0,3-0,1}{1,2-(-1)} = \frac{1,2-(-1)}{0,3-0,1} = 11$$

$$f(x_1,x_2) = \frac{y_2-y_1}{x_2-x_1} = \frac{1-1,2}{0,6-0,3} = -0,6667$$

$$f(x_2,x_3) = \frac{y_3-y_2}{x_3-x_2} = \frac{1,5-1}{0,8-0,6} = 2,5$$

$$f(x_0,x_1,x_2) = \frac{f(x_1,x_2)-f(x_0,x_1)}{x_2-x_0} = \frac{-0,6667-11}{0,6-0,1} =$$

$$= -23,333$$

$$f(x_1,x_2,x_3) = \frac{f(x_2,x_3)-f(x_1,x_2)}{x_3-x_1} = \frac{2,5-(-0,6667)}{0,8-0,3} =$$

$$= 6,333$$

$$f(x_0,x_1,x_2,x_3) = \frac{f(x_1,x_2,x_3)-f(x_0,x_1,x_2)}{x_3-x_0} =$$

$$= \frac{6,333-(-23,33)}{0,8-0,1} = 42,38$$

$$WN_3(0{,}55) = -1 + 11 \cdot (0{,}55 - 0{,}1) + (-23{,}33)(0{,}55-0{,}1)(0{,}55-0{,}3) +$$

$$+ 42{,}38\,(0{,}55-0{,}1)(0{,}55-0{,}3)(0{,}55-0{,}6) = 1{,}087$$