

1) $f(x) = x^3 - 3x^2 + x - 1$

$\rightarrow f'(x) = 3x^2 - 6x + 1 \rightarrow f''(x) = 6x - 6 \rightarrow x_W = 1$

$\rightarrow f'''(x) = 6 \neq 0 \rightarrow \underline{f(1) = -2} \rightarrow \underline{W(1; -2)}$

2) $f(x) = -\frac{2}{3}x^3 + \frac{1}{2}x^2 - \frac{1}{3}x + \frac{5}{6}$

$\rightarrow f'(x) = -2x^2 + x - \frac{1}{3} \rightarrow f''(x) = -4x + 1 \rightarrow x_W = \frac{1}{4}$

$\rightarrow f'''(x) = -4 \neq 0 \rightarrow \underline{f(\frac{1}{4}) \approx 0,771} \rightarrow \underline{W(\frac{1}{4}; 0,771)}$

3) $f(x) = 2x^4 - 3x^3 - 4x^2 + 5x - 6$

$\rightarrow f'(x) = 8x^3 - 9x^2 - 8x + 5 \rightarrow f''(x) = 24x^2 - 18x - 8 \rightarrow x_{W1} \approx 1,063 \quad x_{W2} \approx -0,313$

$\rightarrow f'''(x) = 48x - 18$

$\rightarrow f'''(1,063) \approx 33 \neq 0 \rightarrow \underline{f(1,063) \approx -6,255} \rightarrow \underline{W_1(1,063; -6,255)}$

$\rightarrow f'''(-0,313) \approx -33 \neq 0 \rightarrow \underline{f(-0,313) \approx -7,845} \rightarrow \underline{W_2(-0,313; -7,845)}$

4) $f(x) = -\frac{3}{4}x^4 - x^3 + \frac{1}{2}x^2 + \frac{1}{3}x$

$\rightarrow f'(x) = -3x^3 - 3x^2 + x + \frac{1}{3} \rightarrow f''(x) = -9x^2 - 6x + 1 \rightarrow x_{W1} \approx -0,805 \quad x_{W2} \approx 0,138$

$\rightarrow f'''(x) = -18x - 6$

$\rightarrow f'''(-0,805) \approx 8,5 \neq 0 \rightarrow \underline{f(-0,805) \approx 0,262} \rightarrow \underline{W_1(-0,805; 0,262)}$

$\rightarrow f'''(0,138) \approx -8,5 \neq 0 \rightarrow \underline{f(0,138) \approx 0,053} \rightarrow \underline{W_2(0,138; 0,053)}$