$\boxed{Z3}$

Warunki

I) $f(x_k) = y_k$

II) f, f', f'' są ciągłe na $[-2, 2]$

III) $f\big|_{[x_{k-1}, x_k]} \in \Pi_3$

IV) $f''(-2) = S''(2)$

$$f(x) = \begin{cases} 2020x, & x \in [-2, -1] \\ ax^3 + bx^2 + cx + d, & x \in [-1, 1] \\ -2020x, & x \in [1, 2] \end{cases}$$

$$f'(x) = \begin{cases} 2020, & x \in [-2, -1] \\ 3ax^2 + 2bx + c, & x \in [-1, 1] \\ -2020, & x \in [1, 2] \end{cases}$$

$$f''(x) = \begin{cases} 0, & x \in [-2, -1] \\ 6ax + 2b, & x \in [-1, 1] \\ 0, & x \in [1, 2] \end{cases}$$

I) z braku możliwości sprawdzenia zakładam, że tak

II)
$$\left.\begin{aligned} f_1(-1) = f_2(-1):&\quad -2020 = -a + b - c + d \\ f_2(1) = f_3(1):&\quad a + b + c + d = -2020 \end{aligned}\right\} \Rightarrow 2a + 2c = 0$$

$$\left.\begin{aligned} f_1''(-1) = f_2''(-1):&\quad 0 = -6a + 2b \\ f_2''(1) = f_3''(1):&\quad 6a + 2b = 0 \end{aligned}\right\} \Rightarrow a = 0$$

$$\begin{cases} 6a + 2b = 0 \\ a = 0 \\ 2a + 2c = 0 \end{cases} \rightarrow \begin{cases} a = 0 \\ b = 0 \\ 2a + 2c = 0 \end{cases} \rightarrow \begin{matrix} a = 0 \\ b = 0 \\ c = 0 \end{matrix}$$

$f_2'(1) = f_3'(1)$: $3a + 2b + c = -2020$

$0 + 0 + 0 \neq -2020$

Sprzeczność!

$\boxed{f \text{ nie jest NIFS3}}$