$$[(x-x_0)(x-x_1)(x-x_2)]'$$

$$= (x-x_0)'(x-x_1)(x-x_2) + \big((x-x_1)(x-x_2)\big)'(x-x_0)$$

$$\begin{aligned} &= (x-x_0)'(x-x_1)(x-x_2) \\ &\qquad + \big((x-x_1)'(x-x_2) + (x-x_2)'(x-x_1)\big)(x-x_0) \end{aligned}$$

$$\begin{aligned} &= (x-x_0)'(x-x_1)(x-x_2) + (x-x_1)'(x-x_0)(x-x_2) \\ &\qquad + (x-x_2)'(x-x_0)(x-x_1) \end{aligned}$$

$$= (x-x_1)(x-x_2) + (x-x_0)(x-x_2) + (x-x_0)(x-x_1)$$

$$= \prod_{i=0, i\neq 0}^{2} (x-x_i) + \prod_{i=0, i\neq 1}^{2} (x-x_i) + \prod_{i=0, i\neq 2}^{2} (x-x_i)$$

$$\sum_{j=0}^{2} \prod_{i=0, i\neq J}^{2} (x-x_i)$$

Pour $x = x_0$

$$(x_0-x_1)(x_0-x_2)$$

$$\prod_{i=0, i\neq 0}^{2} (x_0-x_i)$$

Pour $x = x_1$

$$(x_1-x_O)(x_1-x_2)$$

$$\prod_{i=0, i\neq 1}^{2} (x_1-x_i)$$

$$\begin{cases} U_{n_0} = x_0 \\ U_{n+1} = u_n + r \end{cases}$$

$$U_n = u_{n_0} + (n - n_0)r$$

$$U_n = u_p + (n - p)r$$

$$x_n = x_p + (n - p)r$$

$$x_i = x_j + (i - j)h$$

$$E'(x_i) = \prod_{j=0, i \neq j}^{n} (i - j) \left(h^n \frac{f^{(n+1)}(\varepsilon_i)}{(n+1)!} \right)$$

$$E'(x_0) = \prod_{j=0, 0 \neq j}^{1} (0 - j) \left(h^1 \frac{f^{(1+1)}(\varepsilon_0)}{(1+1)!} \right)$$

$$(-1) \left(h \frac{f^{(2)}(\varepsilon_0)}{(2)!} \right) = -\frac{h}{2} f''(\varepsilon_0)$$

$$E'(x_1) = \prod_{j=0, 1 \neq j}^{1} (1) \left(h^1 \frac{f^{(1+1)}(\varepsilon_1)}{(1+1)!} \right)$$

$$E'(x_1) = \frac{h}{2} f''(\varepsilon_1)$$