n	$f(x)$	$f'(x)$
n_0 -1	$f(x_0)$ 0.86199980	$f(x_0)$ 0.1553640
n_1 -0.5	$f(x_1)$ 0.95802009	$f(x_1)$ 0.23269394
n_2 0	$f(x_2)$ 1.0986123	$f(x_2)$ 0.33333333
n_3 0.5	$f(x_3)$ 1.2943767	$f(x_3)$ 0.43366676

$$L_{3,0} = \frac{(n_0 - n_2)(n_0 - n_3)}{(n_0 - n_2)(n_0 - n_3)} = \frac{(n_0 - 0)(n_0 - 0.5)}{(-1-0)(-1-(0.6))} = \frac{n_0^2 - 0.5n_0 - 0 - 0}{1. - 0.5 - 0 - 0}$$

$$= \frac{n_0^2 - 0.5n_0}{-1.5} = \frac{1}{-1.5}\left(n_0^2 - 0.5n_0\right)$$

$$L'_{3,0}\left(\frac{1}{-1.5}\right)\frac{d(n_0^2 - 0.5n)}{dn} = \left(\frac{1}{-1.5}\right)(2n_0 - 0.5)$$

$$L_{3,1} = \frac{(n_0 - n_0)(n_0 - n_3)}{(n_0 - n_0)(n_0 - n_0_3)} = \frac{(n_0 - (-1))(n_0 - 0.5)}{(-0.5 - (-1))(-0.5 - 0.5)} = \frac{n_0^2 - 0.5n_0 - 1n_0 - 0.5}{0.25 - 0.25 - 0.5 - 0.5}$$

$$= \frac{n_0^2 - 1.5n_0 - 0.5}{-1} \quad \left(\frac{1}{-1}\right) n_0^2 - 1.5n_0 - 0.5$$

$$L'_{3,1} = \left(\frac{1}{-1}\right)\frac{d(n_0^2 - 1.5n_0 - 0.5)}{dn_0} = \left(\frac{1}{-1}\right)(2n_0 - 1.5)$$

$$L_{3,2} = \frac{(n_0 - n_0_1)(n_0 - n_0_3)}{(n_0_2 - n_0_1)(n_0_2 - n_0_3)} = \frac{(n_0 - (-0.5))(n_0 - 0.5)}{(0 - (-0.5))(0 - 0.5)} = \frac{n_0^2 - 0.5n_0 - 0.5n_0 - 0.25}{0 - 0 - 0 + 0.25}$$

$$= \frac{n_0^2 - 1n_0 - 0.25}{0.25} = \left(\frac{1}{0.25}\right)(n_0^2 - 1n_0 - 0.25)$$

$$= \left(\frac{1}{0.25}\right)(2n_0 - 1)$$

$$L_{3,3} = \frac{(n_0 - n_{o_0})(n_0 - n_{o_2})}{(n_{o_3} - n_{o_0})(n_{o_3} - n_{o_2})} = \frac{(n_0 - (-1))(n_0 - 0)}{(0.5 - (-1))(0.5 - 0)} = \frac{n_0^2 - 0 - 1 n_0 - 0}{0.25 - 0 - 0.5 - 0}$$

$$= \frac{n_0^2 - 1 n_0}{-0.25} = \frac{1}{-0.25}(n_0^2 - 1n)$$

$$H_{3,0}(n_0) = \left[1 - 2(x - n_{o_0})L'_{3,0}(n_0)\right] L^2_{3,0}(n_0)$$

$$= \left[1 - 2(n_0 - (-1))\left(\frac{1}{-1.5}\right)(2n_{o_0} - 0.5)\right] \left(\left(\frac{1}{-1.5}\right)(n_0^2 - 0.5n_0)\right)^2$$

$$= \left[1 - 2(n_0 - (-1))\left(\frac{2(-1) - 0.5}{-1.5}\right)\right] \frac{(n_0^2 - 0.5n)^2}{-2.25}$$

$$= \left[1 - 2(n_0 - (-1))(1.666666)\right] \frac{(n_0^2 - 0.5n_0)^2}{-2.25}$$

$$= \left[1 - 2.666(n_0 - (-1))\right] \frac{(n_0^2 - 0.5n_0)^2}{-2.25}$$

$$= (1 - 2.666n_0 - 2.666) \frac{(n_0^2 - 0.5n)^2}{-2.25}$$

$$= (-2.666n_0 - 1.66) \frac{(n_0^2 - 0.5n_0)^2}{-2.25} =$$

$$H_{2,1}(x) = \left[1 - 2(n_0 - n_{0_1})L'_{3,1}(n_{0_1})\right]L^2_{3,1}(x)$$

$$= \left[1 - 2(n_0 - (-0.5))(-1)(2n_{0_1} - 1.5)\right]\left[((-1)(n_0^2 - 1.5n_0 - 0.5)^2\right]$$

$$= \left[1 - 2(n_0 - (-0.5))(-2(-0.5) + 1.5)\right]\left[(n_0^2 - 1.5n_0 - 0.5)^2\right]$$

$$= \left[1 - 2(n_0 - (-0.5))(-1(-0.5) + 1.5)\right]\left[(n_0^2 - 1.5n_0 - 0.5)^2\right]$$

$$= \left[1 - 2(n_0 - (0.5)(2.5)\right](n_0^2 - 1.5n_0 - 0.5)^2$$

$$= \left[1 - 5(n_0 - 0.5)\right](n_0^2 - 1.5n_0 - 0.5)^2$$

$$= (5n_0 - 1.5)(n_1^2 - 1.5n_0 - 0.9)^2$$

$$H_{3,2}(x) = \left[1 - 2(n_0 - n_{0_2})L'_{3,2}(n_{0_2})\right]L^2_{3,2}(x)$$

$$= \left[1 - 2(n_0 - 0)\left(\frac{1}{0.25}\right)(2n_{0_2} - 1)\right]\left[\left(\left(\frac{1}{0.25}\right)(n_0^2 - 1n_0 - 0.25)\right)^2\right]$$

$$= \left[1 - 2(n_0 - 0)\frac{(2(0) - 1)}{0.25}\right]\left[\frac{(n_0^2 - 1n_0 - 0.25)^2}{0.0625}\right]$$

$$= \left[1 - 2_6(n_0 - 0)\right]\left[\frac{(n_0^2 - 1n_0 - 0.25)^2}{0.0625}\right]$$

$$= (2n_0 - 1)\frac{(n_0^2 - 1n_0 - 0.25)^2}{0.0625}$$

$$H_{3,3}(x) = \left[1 - 2(x_0 - x_{03})\left[L'_{3,3}(x_{03})\right]\right]L^2_{3,3}(x_0)$$

$$= \left[1 - 2(x_0 - 0.5)\left(\frac{1}{-0.25}(2x_{03} - 1)\right)\right]\left[\left(\left(\frac{1}{-0.25}\right)(x_0^2 - 1x_0)\right)^2\right]$$

$$= \left[1 - 2(x_0 - 0.5)\left(\frac{2(0.5) - 1}{-0.25}\right)\right]\left[\frac{(x_0^2 - 1x_0)^2}{-0.0625}\right]$$

$$= \left(1 - 2x_0 + 1\right)\frac{(x_0^2 - x_0)^2}{-0.0625}$$

$$= \left(-2x_0 + 2\right)\frac{(x_0^2 - x_0)^2}{-0.0625}$$

$$\hat{H}_{3,0}(x_0) = (x_0 - x_{00})L^2_{3,0}(x_0) = \frac{(x_0 - (-1))(x_0^2 - 0.5x_0)}{-1.5}$$

$$= \frac{(x_0 - (-1))(x_0^2 - 6.5x_0)}{-1.5}$$

$$\hat{H}_{3,1}(x_0) = (x_0 - x_{01})L^2_{3,1}(x_0) = \left(x_0 - (-0.5)\right)\left(-x_0^2 + 1.5x_0 + 0.5\right)$$

$$\hat{H}_{3,2}(x_0) = (x_0 - x_{02})L^2_{3,2}(x_0) = \frac{(x_0 - 0)(x_0^2 - 1x - 0.25)}{0.25}$$

$$= \frac{(x_0 - 0)(x_0^2 - 1x_0 - 0.25)}{0.25}$$

$$\hat{H}_{3,3}(x_0) = (x_0 - x_{03})\left[L_{3,3}(x_0) = \frac{(x_0 - 0.5)(x_0^2 - 1x_0)}{-0.25}\right]$$

$$= \frac{(x_0 - 0.5)(x_0^2 - 1x_0)}{-0.25}$$

$$H_7(x) = f(x_0)H_{3,0}(x) + f(x_1)H_{3,1}(x) + f(x_2)H_{3,2}(x) + f(x_3)H_{3,3}(x)$$

$$\quad + f'(x_0)\hat{H}_{3,0}(x) + f'(x_1)\hat{H}_{3,1}(x) + f'(x_2)\hat{H}_{3,2}(x) + f'(x_3)\hat{H}_{3,3}(x)$$

$$= (0.86199480)(-2.666n_0 - 1.66)(n_1^2 - 0.5n_0)^2 + (0.95202009)\xi$$

$$(5n_0 - 1.5)(n_1^2 - 1.5n_0 - 0.5)^2$$

$$+ (1.0986193)\frac{(8n_0 - 1)(n_0^2 - n_0 - 0.25)^2}{0.0.625} + (1.24443767)\frac{(-2n_0 + 2)(n^2 - n_0)^2}{-0.0625}$$

$$f(0.25) = H_7(0.25) = (0.86199480)\frac{(-2.666(0.25) - 1.66)((0.25)^2 - 0.5(0.25))^2}{-9.25}$$

$$+ (0.95302009)\frac{(5(0.25) - 1.9)((0.25)^2 - 1.5(0.25) - 0.5)^2}{0.0625}$$

$$+ (1.0986123)\frac{(8(0.25) - 1)((0.25) - (0.25) - 0.25)^2}{0.0625}$$

$$+ (.94443767)\frac{(-2(0.25) - 2)((0.25)^2 - 0.25)^2}{-0.0625}$$