

5

$$\sum_{k=0}^n l_k(x) = 1$$

$$p_n(x) = \sum_{k=0}^n f(x_k) l_k(x)$$

$$f(x) = p_n(x) + \frac{f^{(n+1)}(\xi)}{(n+1)!} (x-x_0)(x-x_1)\dots(x-x_n)$$

$$\text{If } f(x) = 1 \rightarrow f \equiv 1, \quad f^{(n+1)}(\xi) = 0$$

$$1 = \sum_{k=0}^n 1 \cdot l_k(x) + 0$$

$$\sum_{k=0}^n l_k(x) = 0 \quad \therefore$$