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

* CONSIDER $f(x) = 1$ → POLY

DISCUSS ERROR TERM

ATTEMPT

$$\rightarrow l_k(x) = \prod_{\substack{i=0 \\ i \neq k}}^{n} \frac{x - x_i}{x_k - x_i} \quad ; \; k = 0, 1, \ldots, n$$

$$\sum_{k=0}^{n} l_k(x) = \sum_{k=0}^{n} \left[\prod_{\substack{i=0 \\ i \neq k}}^{n} \frac{x - x_i}{x_k - x_i} \right] =$$

$$P_n(x) = \sum_{k=0}^{n} f(x_k) \cdot l_k(x) = f(x_0) l_0(x) + f(x_1) l_1(x) + \ldots + f(x_n) l_n(x)$$

$f(x) = 1$

(DEG)(0)