

Z7

$$L_n(x) = \sum_{k=0}^n y_k \lambda_k(x)$$

$$\lambda_k(x) = \prod_{\substack{j=0 \\ j \neq k}}^n \frac{x - x_j}{x_k - x_j}$$

	0	1	2	3
$x_k$	-3	-2	0	4
$y_k$	0	2	6	-10

$$\lambda_0 = \frac{(x - x_1)(x - x_2)(x - x_3)}{(x_0 - x_1)(x_0 - x_2)(x_0 - x_3)}$$

$$\lambda_1 = \frac{(x - x_0)(x - x_2)(x - x_3)}{(x_1 - x_0)(x_1 - x_2)(x_1 - x_3)} = \frac{(x + 3)(x - 4)}{12}$$

$$\lambda_2 = \frac{(x - x_0)(x - x_1)(x - x_3)}{(x_2 - x_0)(x_2 - x_1)(x_2 - x_3)} = \frac{(x + 3)(x + 2)(x - 4)}{-24}$$

$$\lambda_3 = \frac{(x - x_0)(x - x_1)(x - x_2)}{(x_3 - x_0)(x_3 - x_1)(x_3 - x_2)} = \frac{(x + 3)(x + 2)x}{168}$$

$$L_3(x) = 0 \cdot \lambda_0 + 2 \frac{(x + 3)(x - 4)}{12} + 6 \frac{(x + 3)(x + 2)(x - 4)}{-24} - 10 \frac{(x + 3)(x + 2)x}{168}$$