第六次作业答案

P45 7.
Newton 插值多项式:

$$N(x) = f[x_0] + \sum_{k=1}^{n} f[x_0, x_1, \ldots, x_k](x - x_0)(x - x_1) \ldots (x - x_{k-1}).$$

差商的值只与节点的值有关，与节点的顺序无关。

$$f(x) = 1 + 2(x - 4) + (x - 4)(x - 1) - (x - 4)(x - 1)(x - 3).$$
$$f(2) = -7, \quad f[2, 3, 4] = 0.$$

P45 9.
性质:

$$\frac{f^{(n+1)}(\xi)}{(n + 1)!} = f[x, x_0, \ldots, x_n].$$
$$f[2^0, 2^1] = -2089, \quad f[2^0, \ldots, 2^7] = 1, \quad f[2^0, \ldots, 2^8] = 0.$$