

$$f_1 = x_1 + x_2 + \dots + x_n$$

$$f_2 = x_1^2 + x_2^2 + \dots + x_n^2$$

$$f_k = x_1^k + x_2^k + \dots + x_n^k$$

x_1, x_2, \dots, x_n の 0 の個数を a , 1 の個数を b , 2 の個数を c とすると,

$$f_1 = b + 2c, \quad f_2 = b + 4c, \quad f_k = b + 2^k c$$

$$b + 4c = f_2$$

$$- \quad b + 2c = f_1$$

$$2c = f_2 - f_1$$

$$c = -\frac{1}{2}f_1 + \frac{1}{2}f_2$$

$$b = -2c + f_1$$

$$= f_1 - f_2 + f_1$$

$$= 2f_1 - f_2$$

$$f_2 \cdot f_k = 2f_1 - f_2 + \left(-\frac{1}{2}f_1 + \frac{1}{2}f_2\right) 2^k$$

$$= (-2^{k-1} + 2)f_1 + (2^{k-1} - 1)f_2$$