$$EX = G'_X(1) \tag{1}$$

$$VarX = G''_X(1) + G'_X(1) - G'_X(1)^2 \tag{2}$$

$$\begin{cases} \kappa_1 = \mu_1 = 3 \\ \kappa_2 = \mu_2 - \mu_1^2 = 0 \\ \kappa_3 = \mu_3 - 3\mu_1\mu_2 + 2\mu_1^3 = 0 \end{cases} \tag{3}$$

$$(coin) \begin{cases} EX = \sum_{k=1}^{m} \widetilde{A}_{(k)}[A_{(k)} = A^{(k)}] \\ VX = (EX)^2 - \sum_{k=1}^{m}(2k-1)\widetilde{A}_{(k)}[A_{(k)} = A^{(k)}] \end{cases} \tag{4}$$

$$\tag{5}$$

欧拉求和公式：

$$\begin{aligned} \sum_{a \le k < b} f(k) = \int_a^b f(x)\mathrm{d}x - \frac{1}{2}f(x)\Big|_a^b + \sum_{k=1}^{m} \frac{B_{2k}}{(2k)!} f^{(2k-1)}(x)\Big|_a^b \\ +O\left((2\pi)^{-2m}\right) \int_a^b \left|f^{(2m)}(x)\right| \mathrm{d}x \end{aligned} \tag{6}$$

伯努利数:

n	0	1	2	3	4	5	6	7	8	9	10	11	12
B_n	1	$\frac{-1}{2}$	$\frac{1}{6}$	0	$\frac{-1}{30}$	0	$\frac{1}{42}$	0	$\frac{-1}{30}$	0	$\frac{5}{66}$	0	$\frac{-691}{2730}$

(7)

对数形式斯特林近似

$$\ln n! = n\ln n - n + \frac{\ln n}{2} + \frac{\ln 2\pi}{2} + \frac{1}{12n} - \frac{1}{360n^3} + \frac{\varphi_{2,n}}{1260n^5} \tag{8}$$

钟形求和

$$\Theta_n = \sum_k e^{-k^2/n} = \sqrt{\pi n} + O(n^{-M}) \tag{9}$$

泰勒展开

$$f(x) = \sum_{n=0}^{\infty} \frac{f^{(n)}(a)}{n!}(x-a)^n$$