We summarize the Wilf rules below.

Suppose that p is a polynomial, D is the usual derivative operator and

$$G(x) \quad \overset{\text{ogf}}{\longleftrightarrow} \quad \{g_n\}_{n\geq 0} \quad \text{and} \quad H(x) \quad \overset{\text{ogf}}{\longleftrightarrow} \quad \{h_n\}_{n\geq 0}$$

Then we have the following rules for ordinary generating functions.

Rule 1: $$\frac{G(x) - g_0 - g_1 x - \cdots - g_{k-1}x^{k-1}}{x^k} \quad \overset{\text{ogf}}{\longleftrightarrow} \quad \{g_{n+k}\}_{n\geq 0}$$

Rule 2: $$p(xD)G(x) \quad \overset{\text{ogf}}{\longleftrightarrow} \quad \{p(n)g_n\}_{n\geq 0}$$

Rule 3: $$G(x)H(x) \quad \overset{\text{ogf}}{\longleftrightarrow} \quad \left\{\sum_{k=0}^{n} g_k h_{n-k}\right\}_{n\geq 0}$$

Rule 4: $$G(x)^k \quad \overset{\text{ogf}}{\longleftrightarrow} \quad \left\{\sum_{n_1+n_2+\cdots+n_k=n} g_{n_1}g_{n_2}\cdots g_{n_k}\right\}_{n\geq 0}$$

Rule 5: $$\frac{G(x)}{1-x} \quad \overset{\text{ogf}}{\longleftrightarrow} \quad \left\{\sum_{k=0}^{n} g_k\right\}_{n\geq 0}$$

Now let p and D be as defined above and

$$G(x) \quad \overset{\text{egf}}{\longleftrightarrow} \quad \{g_n\}_{n\geq 0} \quad \text{and} \quad H(x) \quad \overset{\text{egf}}{\longleftrightarrow} \quad \{h_n\}_{n\geq 0}$$

Then we have the following rules for exponential generating functions.

Rule 1′: $$D^k G(x) \overset{\text{egf}}{\longleftrightarrow} \{g_{n+k}\}_{n\geq 0}$$

Rule 2′: $$p(xD)G(x) \quad \overset{\text{egf}}{\longleftrightarrow} \quad \{p(n)g_n\}_{n\geq 0}$$

Rule 3′: $$G(x)H(x) \quad \overset{\text{egf}}{\longleftrightarrow} \quad \left\{\sum_{k=0}^{n} \binom{n}{k} g_k h_{n-k}\right\}_{n\geq 0}$$