$$(x-1)^k=\sum_{j=0}^{k}(-1)^{k-j}\binom{k}{j}x^j$$

$$\{(x-\mathbf{1})^k\}=\sum_{j=0}^{k}(-1)^{k-j}\binom{k}{j}\{x^j\}$$

	$\int$	$\sum$
$+$	$\frac{(x-1)^k}{k!}=\sum_{j=0}^{k}(-1)^{k-j}\binom{k}{j}\cdot L_j(1-x)$	$\binom{x-1}{k}=\sum_{j=0}^{k}(-1)^{k-j}\binom{k}{j}\cdot\frac{x^{(j)}}{j!}$
$*$	$(-1)^k\cdot\frac{\gamma(k,-\log x)}{\Gamma(k)}=\sum_{j=0}^{k}(-1)^{k-j}\binom{k}{j}\cdot L_{-z}(\log x)$	$D_k{}'(x)=\sum_{j=0}^{k}(-1)^{k-j}\binom{k}{j}D_j(x)$

	$\int$	$\sum$
$+$	$\frac{(x-1)^{k-1}}{(k-1)!}=\sum_{j=0}^{k}(-1)^{k-j}\binom{k}{j}\cdot L_{z-1}^{(1)}(1-x)$	$\binom{x-2}{k-1}=\sum_{j=0}^{k}(-1)^{k-j}\binom{k}{j}\cdot\frac{x^{(j-1)}}{(j-1)!}$
$*$	$\frac{\log^{k-1}x}{(k-1)!}=\sum_{j=0}^{k}(-1)^{k-j}\binom{k}{j}\cdot(-\frac{1}{x}\cdot L_{-j-1}^{(1)}(\log x))$	$d_k{}'(x)=\sum_{j=0}^{k}(-1)^{k-j}\binom{k}{j}d_j(x)$

$$x^z=\sum_{k=0}^{\infty}\frac{z^k}{k!}\log^k x$$

$$\{x^z\}=\sum_{k=0}^{\infty}\frac{z^k}{k!}\{\log^k x\}$$

...

$$(x-1)^k=\sum_{j=0}^{\infty}(\lim_{t\to 0}\frac{\partial^j}{\partial t^j}(e^t-1)^k)\log^j x$$

$$\{(x-\mathbf{1})^k\}=\sum_{j=0}^{\infty}(\lim_{t\to 0}\frac{\partial^j}{\partial t^j}(e^t-1)^k)\{\log^j x\}$$

$$(x-1)^k=\sum_{j=0}\frac{1}{j!}(\lim_{t\to 0}\frac{\partial^j}{\partial t^j}\frac{t}{\log(1+t)})\cdot(x-1)^{k-1+j}\cdot\log x$$

$$\{(x-\mathbf{1})^k\}=\sum_{j=0}\frac{1}{j!}(\lim_{t\to 0}\frac{\partial^j}{\partial t^j}\frac{t}{\log(1+t)})\cdot\{(x-\mathbf{1})^{k-1+j}\cdot\log x\}$$

$$\log^k x=\sum_{j=1}\frac{(-1)^{j+1}}{j}(x-1)^j\cdot\log^{k-1}x$$

$$\{\log^k x\}=\sum_{j=1}\frac{(-1)^{j+1}}{j}\{(x-\mathbf{1})^j\cdot\log^{k-1}x\}$$

$$\log x=\sum_{k=0}\frac{B_k}{k!}(x-1)\cdot\log^k x$$

$$\{\log x\} = \sum_{k=0} \frac{B_k}{k!} \{(x \mathbf{-1}) \cdot \log^k x\}$$

$$\log^a x = \sum_{k=0} \frac{B_k}{k!} (x-1) \cdot \log^{k+a} x$$

$$\{\log^a x\} = \sum_{k=0} \frac{B_k}{k!} \{(x \mathbf{-1}) \cdot \log^{k+a} x\}$$

which is

$$\log x = \sum_{k=0} \frac{1}{k!} \cdot (\lim_{t \to 0} \frac{\partial^k}{\partial t^k} \frac{t}{e^t - 1}) \cdot (x-1) \cdot \log^k x$$

...

$$(x-1)^{a+b} = (x-1)^a \cdot (x-1)^b$$

$$\{(x-1)^{a+b}\} = \{(x-1)^a \cdot (x-1)^b\}$$

$$x^{y+z} = x^y \cdot x^z$$

$$\{x^{y+z}\} = \{x^y \cdot x^z\}$$

$$\log^{a+b} x = \log^a x \cdot \log^b x$$

$$\{\log^{a+b} x\} = \{\log^a x \cdot \log^b x\}$$

...

$$\log x = \lim_{z \to 0} \frac{\partial}{\partial z} x^z$$
$$\{\log x\} = \lim_{z \to 0} \frac{\partial}{\partial z} \{x^z\}$$

	$\int$	$\sum$
$+$	$\Gamma(0, x-1) + \log(x-1) + \gamma = \lim_{z \to 0} \frac{\partial}{\partial z} L_z(1-x)$	$H_{x-1} = \lim_{z \to 0} \frac{\partial}{\partial z} \frac{x^{(z)}}{z!}$
$*$	$li(x) - \log\log x - \gamma = \lim_{z \to 0} \frac{\partial}{\partial z} L_{-z}(\log x)$	$\Pi(x) = \lim_{z \to 0} \frac{\partial}{\partial z} D_z(x)$

	$\int$	$\sum$
$+$	$\frac{1}{x-1} - \frac{e^{1-x}}{x-1} = \lim_{z \to 0} \frac{\partial}{\partial z} L_{z-1}^{(1)}(1-x)$	$\frac{1}{x-1} = \lim_{z \to 0} \frac{\partial}{\partial z} \frac{x^{(z-1)}}{(z-1)!}$
$*$	$\frac{1}{\log x} - \frac{1}{x \log x} = \lim_{z \to 0} \frac{\partial}{\partial z} - \frac{1}{x} \cdot L_{-z-1}^{(1)}(\log x)$	$\kappa(x) = \lim_{z \to 0} \frac{\partial}{\partial z} d_z(x)$

$$\log x = \lim_{z \to 0} \frac{x^z - 1}{z}$$
$$\{\log x\} = \lim_{z \to 0} \frac{\{x^z\} - 1}{z}$$

$$\log^k x = \lim_{z \to 0} \frac{\partial^k}{\partial z^k} x^z$$
$$\{\log^k x\} = \lim_{z \to 0} \frac{\partial^k}{\partial z^k} \{x^z\}$$

...

$$\log x^z = z \log x$$

$$\{\log x^z\} = z \{\log x\}$$

$$\log a \cdot b = \log a + \log b$$

$$\{\log a \cdot b\} = \{\log a\} + \{\log b\}$$

$$\log \frac{a}{b} = \log a - \log b$$

$$\{\log \frac{a}{b}\} = \{\log a\} - \{\log b\}$$

...

$$t \cdot \log x = \lim_{z \to 0} \frac{\partial}{\partial z}(x^{z \cdot t})$$

$$t \cdot \{\log x\} = \lim_{z \to 0} \frac{\partial}{\partial z} \{x^{z \cdot t}\}$$

	$\int$	$\sum$
+	$t \cdot (\Gamma(0, x-1) + \log(x-1) + \gamma) = \lim_{z \to 0} \frac{\partial}{\partial z} L_{z \cdot t}(1-x)$	$t \cdot H_{x-1} = \lim_{z \to 0} \frac{\partial}{\partial z} \frac{x^{(z \cdot t)}}{(z t)!}$
*	$t \cdot (li(x) - \log \log x - \gamma) = \lim_{z \to 0} \frac{\partial}{\partial z} L_{-(z \cdot t)}(\log x)$	$t \cdot \Pi(x) = \lim_{z \to 0} \frac{\partial}{\partial z} D_{z \cdot t}(x)$

	$\int$	$\sum$
+	$t \cdot (\frac{1}{x-1} - \frac{e^{1-x}}{x-1}) = \lim_{z \to 0} \frac{\partial}{\partial z} L_{t \cdot z - 1}^{(1)}(1-x)$	$t \cdot \frac{1}{x-1} = \lim_{z \to 0} \frac{\partial}{\partial z} \frac{x^{(t \cdot z - 1)}}{(t \cdot z - 1)!}$
*	$t (\frac{1}{\log x} - \frac{1}{x \log x}) = \lim_{z \to 0} \frac{\partial}{\partial z} - \frac{1}{x} \cdot L_{-t \cdot z - 1}^{(1)}(\log x)$	$t \cdot \kappa(x) = \lim_{z \to 0} \frac{\partial}{\partial z} d_{t \cdot z}(x)$

...

$$\log n + \log m = \lim_{z \to 0} \frac{\partial}{\partial z}(n^z \cdot m^z)$$

$$\{\log n\} + \{\log m\} = \lim_{z \to 0} \frac{\partial}{\partial z}(\{n^z\} \cdot \{m^z\})$$

$$\log n - \log m = \lim_{z \to 0} \frac{\partial}{\partial z}\left(\frac{n^z}{m^z}\right)$$

$$\{\log n\} - \{\log m\} = \lim_{z \to 0} \frac{\partial}{\partial z}\left(\frac{\{n^z\}}{\{m^z\}}\right)$$

$\ldots$

$$\{(n \cdot m)^z\} = \sum_{\frac{\log j}{\log n} + \frac{\log k}{\log m} \le 1} \nabla \{j^z\} \cdot \nabla \{k^z\}$$

$$\{\left(\frac{n}{m}\right)^z\} = \sum_{\frac{\log j}{\log n} + \frac{\log k}{\log m} \le 1} \nabla \{j^z\} \cdot \nabla \{k^{-z}\}$$

$\ldots$

$$\log(n \cdot m) = \log n + \log m$$

$$\{\log(n \cdot m)\} = \{\log n\} + \{\log m\}$$

$$\log \frac{n}{m} = \log n - \log m$$

$$\{\log \frac{n}{m}\} = \{\log n\} - \{\log m\}$$

$$\{(x-1)^{a+b}\}=\{(x-1)^{a}\cdot(x-1)^{b}\}$$

$$\frac{x^{a+b}}{(a+b)!}=\int_{0}^{x}\int_{0}^{x-t}\frac{t^{a-1}}{(a-1)!}\cdot\frac{u^{b-1}}{(b-1)!}\,du\,dt$$

$$\binom{x}{a+b}=\sum_{t=1}^{x}\sum_{u=1}^{x-t}\binom{t-1}{a-1}\cdot\binom{u-1}{b-1}$$

$$(-1)^{a+b}\cdot\frac{\gamma(a+b,-\log x)}{\Gamma(a+b)}=\int_{1}^{x}\int_{1}^{\frac{x}{t}}\frac{\log^{a-1}t}{(a-1)!}\cdot\frac{\log^{b-1}u}{(b-1)!}\,du\,dt$$

$$D_{a+b}'(x)=\sum_{t=2}^{x}\sum_{u=2}^{\frac{x}{t}}d_{a}'(t)\cdot d_{b}'(u)$$

AND

$$\{(x-1)^{a+b}\}=\{(x-1)^{a}\cdot(x-1)^{b}\}$$

$$\frac{x^{a+b-1}}{(a+b-1)!}=\int_{0}^{x}\frac{t^{a-1}}{(a-1)!}\cdot\frac{(x-t)^{b-1}}{(b-1)!}\,dt$$

$$\frac{\log^{a+b-1}t}{(a+b-1)!}=\int_{1}^{x}\frac{\log^{a-1}t}{(a-1)!}\cdot\frac{\log^{b-1}\frac{x}{t}}{(b-1)!}\,dt\ \ ???$$

$$d_{a+b}'(x)=\sum_{t\cdot u=x}d_{a}'(t)\cdot d_{b}'(u)$$

...

$$\{x^{y+z}\}=\{x^{y}\cdot x^{z}\}$$

$$\frac{x^{(z)}}{z!}\quad\frac{x^{(z-1)}}{(z-1)!}$$