adf

$$x^0 = 1$$
$$x = 1 + \int_1^x dt$$
$$x^2 = 1 + 2\int_1^x dt + \int_1^x \int_1^x du\, dt$$
$$x^3 = 1 + 3\int_1^x dt + 3\int_1^x \int_1^x du\, dt + \int_1^x \int_1^x \int_1^x dv\, du\, dt$$

af

$$[x^0]^{+\int} = 1$$
$$[x]^{+\int} = 1 + \int_0^{(x-1)} dt$$
$$[x^2]^{+\int} = 1 + 2\int_0^{(x-1)} dt + \int_0^{(x-1)} \int_0^{(x-1)-t} du\, dt$$
$$[x^3]^{+\int} = 1 + 3\int_0^{(x-1)} dt + 3\int_0^{(x-1)} \int_0^{(x-1)-t} du\, dt + \int_0^{(x-1)} \int_0^{(x-1)-t} \int_0^{(x-1)-t-u} dv\, du\, dt$$

af

$$[x^0]^{+\Sigma} = 1$$
$$[x]^{+\Sigma} = 1 + \sum_{t=1}^{(x-1)} 1$$
$$[x^2]^{+\Sigma} = 1 + 2\sum_{t=1}^{(x-1)} 1 + \sum_{t=1}^{(x-1)} \sum_{u=1}^{(x-1)-t} 1$$
$$[x^3]^{+\Sigma} = 1 + 3\sum_{t=1}^{(x-1)} 1 + 3\sum_{t=1}^{(x-1)} \sum_{u=1}^{(x-1)-t} 1 + \sum_{t=1}^{(x-1)} \sum_{u=1}^{(x-1)-t} \sum_{v=1}^{(x-1)-t-u} 1$$

af

$$[x^0]_n^{*\int} = 1$$
$$[x]^{*\int} = 1 + \int_1^x dt$$
$$[x^2]^{*\int} = 1 + 2\int_1^x dt + \int_1^x \int_1^{\frac{x}{t}} du\, dt$$
$$[x^3]^{*\int} = 1 + 3\int_1^x dt + 3\int_1^x \int_1^{\frac{x}{t}} du\, dt + \int_1^x \int_1^{\frac{x}{t}} \int_1^{\frac{x}{t \cdot u}} dv\, du\, dt$$

af

$$[x^0]^{*\Sigma} = 1$$

$$[x]^{*\Sigma} = 1 + \sum_{t=2}^{x} 1$$

$$[x^2]^{*\Sigma} = 1 + 2\sum_{t=2}^{x} 1 + \sum_{t=2}^{x} \sum_{u=2}^{\lfloor \frac{x}{t} \rfloor} 1$$

$$[x^3]^{*\Sigma} = 1 + 3\sum_{t=2}^{x} 1 + 3\sum_{t=2}^{x} \sum_{u=1}^{\lfloor \frac{x}{t} \rfloor} 1 + \sum_{t=2}^{x} \sum_{u=2}^{\lfloor \frac{x}{t} \rfloor} \sum_{v=2}^{\lfloor \frac{x}{t \cdot u} \rfloor} 1$$

adf

$$x^0=1$$
$$x=\int_0^x dt$$
$$x^2=\int_0^x \int_0^x du\,dt$$
$$x^3=\int_0^x \int_0^x \int_0^x dv\,du\,dt$$

af

$$[x^0]^{+\Sigma}=1$$
$$[x]^{+\Sigma}=\sum_{t=0}^{(x-1)} 1$$
$$[x^2]^{+\Sigma}=\sum_{t=0}^{(x-1)} \sum_{u=0}^{(x-1)-t} 1$$
$$[x^3]^{+\Sigma}=\sum_{t=0}^{(x-1)} \sum_{u=0}^{(x-1)-t} \sum_{v=0}^{(x-1)-t-u} 1$$

af

$$[x^0]^{*\Sigma}=1$$
$$[x]^{*\Sigma}=\sum_{t=1}^{x} 1$$
$$[x^2]^{*\Sigma}=\sum_{t=1}^{x} \sum_{u=1}^{\lfloor \frac{x}{t} \rfloor} 1$$
$$[x^3]^{*\Sigma}=\sum_{t=1}^{x} \sum_{u=1}^{\lfloor \frac{x}{t} \rfloor} \sum_{v=1}^{\lfloor \frac{x}{t \cdot u} \rfloor} 1$$

af

$$x^k=\int_0^x x^{k-1}\,dt$$
$$[x^k]^{+\Sigma}=\sum_{t=0}^{(x-1)} [(x-t)^{k-1}]^{+\Sigma}$$
$$[x^k]^{*\Sigma}=\sum_{t=1}^{\lfloor x \rfloor} [(\frac{x}{t})^{k-1}]^{*\Sigma}$$

adf

$$(x-1)^0=1$$
$$x-1=\int_1^x dt$$
$$(x-1)^2=\int_1^x \int_1^x du\,dt$$
$$(x-1)^3=\int_1^x \int_1^x \int_1^x dv\,du\,dt$$

af

$$[(x-\mathbf{1})^0]^{+\int}=1$$
$$[x-\mathbf{1}]^{+\int}=\int_0^{(x-1)} dt$$
$$[(x-\mathbf{1})^2]^{+\int}=\int_0^{(x-1)} \int_0^{(x-1)-t} du\,dt$$
$$[(x-\mathbf{1})^3]^{+\int}=\int_0^{(x-1)} \int_0^{(x-1)-t} \int_0^{(x-1)-t-u} dv\,du\,dt$$

af

$$[(x-\mathbf{1})^0]^{+\Sigma}=1$$
$$[x-\mathbf{1}]^{+\Sigma}=\sum_{t=1}^{(x-1)} 1$$
$$[(x-\mathbf{1})^2]^{+\Sigma}=\sum_{t=1}^{(x-1)} \sum_{u=1}^{(x-1)-t} 1$$
$$[(x-\mathbf{1})^3]^{+\Sigma}=\sum_{t=1}^{(x-1)} \sum_{u=1}^{(x-1)-t} \sum_{v=1}^{(x-1)-t-u} 1$$

af

$$[(x-\mathbf{1})^0]^{*\int}=1$$
$$[x-\mathbf{1}]^{*\int}=\int_1^x dt$$
$$[(x-\mathbf{1})^2]^{*\int}=\int_1^x \int_1^{\frac{x}{t}} du\,dt$$
$$[(x-\mathbf{1})^3]^{*\int}=\int_1^x \int_1^{\frac{x}{t}} \int_1^{\frac{x}{tu}} dv\,du\,dt$$

af

$$[(x-\mathbf{1})^0]^{*\Sigma}=1$$

$$[x-\mathbf{1}]^{*\Sigma}=\sum_{t=2}^{x}1$$

$$[(x-\mathbf{1})^2]^{*\Sigma}=\sum_{t=2}^{x}\sum_{u=2}^{\lfloor\frac{x}{t}\rfloor}1$$

$$[(x-\mathbf{1})^3]^{*\Sigma}=\sum_{t=2}^{x}\sum_{u=2}^{\lfloor\frac{x}{t}\rfloor}\sum_{v=2}^{\lfloor\frac{x}{t\cdot u}\rfloor}1$$

af

$$(x-1)^k=\int_{1}^{x}(x-1)^{k-1}\,dt$$

$$[(x-\mathbf{1})^k]^{+\int}=\int_{0}^{(x-1)}[(x-t-\mathbf{1})^{k-1}]^{+\int}\,dt$$

$$[(x-\mathbf{1})^k]^{+\Sigma}=\sum_{t=1}^{(x-1)}[(x-t-\mathbf{1})^{k-1}]^{+\Sigma}$$

$$[(x-\mathbf{1})^k]^{*\int}=\int_{1}^{x}[(\frac{x}{t}-\mathbf{1})^{k-1}]^{*\int}\,dt$$

$$[(x-\mathbf{1})^k]^{*\Sigma}=\sum_{t=2}^{\lfloor x\rfloor}[(\frac{x}{t}-\mathbf{1})^{k-1}]^{*\Sigma}$$

If 0 < x < 2,

$$x^z = 1 + \binom{z}{1}\int_1^x dt + \binom{z}{2}\int_1^x \int_1^x du\, dt + \binom{z}{2}\int_1^x \int_1^x \int_1^x dv\, du\, dt + \ldots$$

af

$$[x^z]^{+\int} = 1 + \binom{z}{1}\int_0^{(x-1)} dt + \binom{z}{2}\int_0^{(x-1)} \int_0^{(x-1)-t} du\, dt + \binom{z}{2}\int_0^{(x-1)} \int_0^{(x-1)-t} \int_0^{(x-1)-t-u} dv\, du\, dt + \ldots$$

af

$$[x^z]^{+\Sigma} = 1 + \binom{z}{1}\sum_{t=1}^{(x-1)} 1 + \binom{z}{2}\sum_{t=1}^{(x-1)} \sum_{u=1}^{(x-1)-t} 1 + \binom{z}{2}\sum_{t=1}^{(x-1)} \sum_{u=1}^{(x-1)-t} \sum_{v=1}^{(x-1)-t-u} 1 + \ldots$$

af

$$[x^z]^{*\int} = 1 + \binom{z}{1}\int_1^x dt + \binom{z}{2}\int_1^x \int_1^{\frac{x}{t}} du\, dt + \binom{z}{2}\int_1^x \int_1^{\frac{x}{t}} \int_1^{\frac{x}{t\,u}} dv\, du\, dt + \ldots$$

af

$$[x^z]^{*\Sigma} = 1 + \binom{z}{1}\sum_{t=2}^{x} 1 + \binom{z}{2}\sum_{t=2}^{x} \sum_{u=2}^{\lfloor \frac{x}{t} \rfloor} 1 + \binom{z}{2}\sum_{t=2}^{x} \sum_{u=2}^{\lfloor \frac{x}{t} \rfloor} \sum_{v=2}^{\lfloor \frac{x}{t \cdot u} \rfloor} 1 + \ldots$$

If 0 < x < 2,

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

$$[x^z]^{+\int} = \sum_{k=0}^{\infty} \binom{z}{k} [(x-\mathbf{1})^k]^{+\int}$$

$$[x^z]^{+\Sigma} = \sum_{k=0}^{\infty} \binom{z}{k} [(x-\mathbf{1})^k]^{+\Sigma}$$

$$[x^z]^{*\int} = \sum_{k=0}^{\infty} \binom{z}{k} [(x-\mathbf{1})^k]^{*\int}$$

$$[x^z]^{*\Sigma} = \sum_{k=0}^{\infty} \binom{z}{k} [(x-\mathbf{1})^k]^{*\Sigma}$$

If 0 < x < 2,

$$\log x = \int_1^x dt - \frac{1}{2}\int_1^x \int_1^x du\, dt + \frac{1}{3}\int_1^x \int_1^x \int_1^x dv\, du\, dt - \ldots$$

af

$$[\log x]^{+\int} = \int_0^{(x-1)} dt - \frac{1}{2}\int_0^{(x-1)} \int_0^{(x-1)-t} du\, dt + \frac{1}{3}\int_0^{(x-1)} \int_0^{(x-1)-t} \int_0^{(x-1)-t-u} dv\, du\, dt - \frac{1}{4}\ldots$$

af

$$[\log x]^{+\Sigma} = \sum_{t=1}^{x-1} 1 - \frac{1}{2}\sum_{t=1}^{(x-1)} \sum_{u=1}^{(x-1)-t} 1 + \frac{1}{3}\sum_{t=1}^{(x-1)} \sum_{u=1}^{(x-1)-t} \sum_{v=1}^{(x-1)-t-u} 1 - \frac{1}{4}\ldots$$

$$[\log x]^{*\int} = \int_1^x dt - \frac{1}{2}\int_1^x \int_1^{\frac{x}{t}} du\, dt + \frac{1}{3}\int_1^x \int_1^{\frac{x}{t}} \int_1^{\frac{x}{t\,u}} dv\, du\, dt - \ldots$$

$$[\log x]^{*\Sigma} = \sum_{t=2}^{x} 1 - \frac{1}{2}\sum_{t=2}^{x} \sum_{u=2}^{\lfloor\frac{x}{t}\rfloor} 1 + \frac{1}{3}\sum_{t=2}^{x} \sum_{u=2}^{\lfloor\frac{x}{t}\rfloor} \sum_{v=2}^{\lfloor\frac{x}{t\cdot u}\rfloor} 1 - \ldots$$

adf

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

adf

$$[\log x]_n^{+\int} = \sum_{k=1}^{\infty} \frac{(-1)^{k+1}}{k} [(x-1)^k]_n^{+\int}$$

$$[\log x]_n^{+\Sigma} = \sum_{k=1}^{\infty} \frac{(-1)^{k+1}}{k} [(x-1)^k]_n^{+\Sigma}$$

$$[\log x]_n^{*\int} = \sum_{k=1}^{\infty} \frac{(-1)^{k+1}}{k} [(x-1)^k]_n^{*\int}$$

$$[\log x]_n^{*\Sigma} = \sum_{k=1}^{\infty} \frac{(-1)^{k+1}}{k} [(x-1)^k]_n^{*\Sigma}$$

adf

$$\log x = \int_1^x \frac{1}{t} dt$$

$$\log^2 x = \int_1^x \int_1^x \frac{1}{t} \cdot \frac{1}{u} du\, dt$$

$$\log^3 x = \int_1^x \int_1^x \int_1^x \frac{1}{t} \cdot \frac{1}{u} \cdot \frac{1}{v} dv\, du\, dt$$

af

$$\log^k x = \int_1^x \frac{1}{t} \cdot \log^{k-1} x\, dt$$

af

$$[\log x]^{+\int} = \int_0^{(x-1)} \frac{1}{t} - \frac{e^{-t}}{t} dt$$

$$[\log^2 x]^{+\int} = \int_0^{(x-1)} \int_0^{(x-1)-t} (\frac{1}{t} - \frac{e^{-t}}{t}) \cdot (\frac{1}{u} - \frac{e^{-u}}{u}) du\, dt$$

$$[\log^3 x]^{+\int} = \int_0^{(x-1)} \int_0^{(x-1)-t} \int_0^{(x-1)-t-u} (\frac{1}{t} - \frac{e^{-t}}{t}) \cdot (\frac{1}{u} - \frac{e^{-u}}{u}) \cdot (\frac{1}{v} - \frac{e^{-v}}{v}) dv\, du\, dt$$

af

$$[\log x]^{+\Sigma} = \sum_{t=1}^{(x-1)} \frac{1}{t}$$

$$[\log^2 x]^{+\Sigma} = \sum_{t=1}^{(x-1)} \sum_{u=1}^{(x-1)-t} \frac{1}{t} \cdot \frac{1}{u}$$

$$[\log^3 x]^{+\Sigma} = \sum_{t=1}^{(x-1)} \sum_{u=1}^{(x-1)-t} \sum_{v=1}^{(x-1)-t-u} \frac{1}{t} \cdot \frac{1}{u} \cdot \frac{1}{v}$$

af

$$[\log x]^{*\int} = \int_1^x \frac{1}{\log t} - \frac{1}{t \log t} dt$$

$$[\log^2 x]^{*\int} = \int_1^x \int_1^{\frac{x}{t}} (\frac{1}{\log t} - \frac{1}{t \log t}) \cdot (\frac{1}{\log u} - \frac{1}{u \log u}) du\, dt$$

$$[\log^3 x]^{*\int} = \int_1^x \int_1^{\frac{x}{t}} \int_1^{\frac{x}{t \cdot u}} (\frac{1}{\log t} - \frac{1}{t \log t}) \cdot (\frac{1}{\log u} - \frac{1}{u \log u}) \cdot (\frac{1}{\log v} - \frac{1}{v \log v}) dv\, du\, dt$$

af

$$[\log x]^{*\Sigma} = \sum_{t=2}^{x} \kappa(t)$$

$$[\log^2 x]^{*\Sigma} = \sum_{t=2}^{x} \sum_{u=2}^{\lfloor \frac{x}{t} \rfloor} \kappa(t) \cdot \kappa(u)$$

$$[\log^3 x]^{*\Sigma} = \sum_{t=2}^{x} \sum_{u=2}^{\lfloor \frac{x}{t} \rfloor} \sum_{v=2}^{\lfloor \frac{x}{t \cdot u} \rfloor} \kappa(t) \cdot \kappa(u) \cdot \kappa(v)$$