$$\begin{aligned} G(F(x))&=x
G(F(x))^k&=x^k
(G^k)'\big(F\big)\times F'&=kx^{k-1}
\sum\limits_{i=0}i{G^k}[i]F^{i-1}F'&=kx^{k-1}
\sum\limits_{i=0}i{G^k}[i]F^{i-n-1}F'&=kx^{k-1}F^{-n}
[x^{-1}]\sum\limits_{i=0}i{G^k}[i]F^{i-n-1}F'&=[x^{-1}]kx^{k-1}F^{-n}
\sum\limits_{i=0}i{G^k}[i]\big[i-n-1=-1\big]&=k[x^{-k}]F^{-n}
nG^k[n]&=k[x^{-k}]F^{-n}
\end{aligned} G(F(x)) G(F(x)) k$$

$$(G k) ′ (F)×F ′$$

$$i=0 ∑ iG k [i]F i−1 F ′$$

$$i=0 ∑ iG k [i]F i−n−1 F ′$$

$$[x −1] i=0 ∑ iG k [i]F i−n−1 F ′$$

$$i=0 ∑ iG k [i][i−n−1=−1] nG k [n]$$

$$=x =x k$$

$$=kx k−1$$

$$=kx k−1$$

$$=kx k−1 F −n$$

$$=[x −1]kx k−1 F −n$$

$$=k[x −k]F −n$$

$$=k[x −k]F −n$$