ID	*Expression*	*Analytical sum*
1	$\sum_{n=1}^{\infty} \varepsilon^{-1+n}\, dP[n, 0]$	$-\frac{s}{w^3}$
2	$\sum_{n=1}^{\infty} n\, \varepsilon^{-1+n}\, dP[n, 0]$	$-\frac{s\left(1+c\,\varepsilon-2\,\varepsilon^2\right)}{w^5}$
3	$\sum_{n=1}^{\infty} n^2\, \varepsilon^{-1+n}\, dP[n, 0]$	$\frac{s\left(w^2\left(-1-2\,c\,\varepsilon+\varepsilon^2\right)-5\,\varepsilon\left(c+\left(-2+c^2\right)\varepsilon-c\,\varepsilon^2+\varepsilon^3\right)\right)}{w^7}$
4	$\sum_{n=1}^{\infty} n^3\, \varepsilon^{-1+n}\, dP[n, 0]$	$\frac{s\left(-1-15\,c\,\varepsilon-18\left(-2+c^2\right)\varepsilon^2-c\left(-39+c^2\right)\varepsilon^3+3\left(-20+c^2\right)\varepsilon^4+9\,c\,\varepsilon^5+8\,\varepsilon^6\right)}{w^9}$
5	$\sum_{n=1}^{\infty} \frac{\varepsilon^{-1+n}\, dP[n,0]}{n}$	$-\frac{s\,(1+w)}{w\,(1+w-c\,\varepsilon)}$
6	$\sum_{n=2}^{\infty} \frac{\varepsilon^{-1+n}\, dP[n,0]}{-1+n}$	$-s\left(\frac{1-w^2+2\,c\,w\,\varepsilon}{w+w^2-c\,w\,\varepsilon}+\mathrm{Log}[2]-\mathrm{Log}[1+w-c\,\varepsilon]\right)$
7	$\sum_{n=1}^{\infty} \frac{\varepsilon^{-1+n}\, dP[n,0]}{1+n}$	$\frac{1-w-c\,\varepsilon}{s\,w\,\varepsilon^2}$
8	$\sum_{n=1}^{\infty} n^2\, \varepsilon^{-1+n}\, dP[n, 1]$	$\frac{c\left(1+2\,c\,\varepsilon-\varepsilon^2\right)}{w^5}+\frac{\varepsilon\left(-12+17\,c^2-6\,c\,s^2\,\varepsilon+3\,s^2\,\varepsilon^2\right)}{w^7}+$ $\frac{5\,\varepsilon^2\left(10\,c^3-6\,c^4\,\varepsilon+\varepsilon\left(8+7\,s^4-6\,\varepsilon^2\right)+c^2\,\varepsilon\left(-1+3\,\varepsilon^2\right)+c\left(-11+2\,\varepsilon^2+\varepsilon^4\right)\right)}{w^9}$
9	$\sum_{n=1}^{\infty} n\, \varepsilon^{-1+n}\, dP[n, 1]$	$\frac{c\left(w^2-\left(5\,s^2+2\,w^2\right)\varepsilon^2\right)+\varepsilon\left(w^2+s^2\left(-5-2\,w^2+10\,\varepsilon^2\right)\right)}{w^7}$
10	$\sum_{n=1}^{\infty} \varepsilon^{-1+n}\, dP[n, 1]$	$\frac{c\,w^2-3\,s^2\,\varepsilon}{w^5}$
11	$\sum_{n=1}^{\infty} \frac{\varepsilon^{-1+n}\, dP[n,1]}{n}$	$\frac{c-\varepsilon}{w^3}-\frac{\varepsilon}{w\,(1+w-c\,\varepsilon)}$
12	$\sum_{n=1}^{\infty} \frac{\varepsilon^{-1+n}\, dP[n,1]}{1+n}$	$\frac{\left(-w^2-s^2\,(1+2\,w)\right)\varepsilon-c^3\,\varepsilon^2+c\left(w^2+w^3+\varepsilon^2\right)}{w^3\,(1+w-c\,\varepsilon)^2}$
13	$\sum_{n=1}^{\infty} \frac{\varepsilon^{-1+n}\, dP[n,1]}{n^2}$	$-\frac{c}{w\,(c+w)\,(c+w-\varepsilon)}+\frac{(-1+c)\,(-1+w)}{s^2\,(c+w)\,\varepsilon}-\frac{c\,(1+w)}{w\,(-1-w+c\,\varepsilon)}-\frac{c\,\mathrm{Log}\left[\frac{1+c}{c+w-\varepsilon}\right]+\mathrm{Log}\left[\frac{1}{2}\,(1+w-c\,\varepsilon)\right]}{s^2\,\varepsilon}$
14	$\sum_{n=2}^{\infty} n\, \varepsilon^{-1+n}\, dP[n, 2]$	$\frac{12\,c\,s\,\varepsilon}{w^5}-\frac{15\,s\left(-2+5\,s^2\right)\varepsilon^2}{w^7}-\frac{15\,s\,\varepsilon^3\left(7\,c\,s^2+2\,c\,w^2-7\,s^2\,\varepsilon\right)}{w^9}$
15	$\sum_{n=2}^{\infty} \varepsilon^{-1+n}\, dP[n, 2]$	$\frac{3\,s\,\varepsilon\left(2\,c\,w^2-5\,s^2\,\varepsilon\right)}{w^7}$
16	$\sum_{n=2}^{\infty} \frac{\varepsilon^{-1+n}\, dP[n,2]}{n}$	$\frac{s\left(4-5\,c\,\varepsilon+\varepsilon^2\right)}{w^5}-\frac{2\,s\,(1+w)\left(w\,\varepsilon^2+(1+w)\,(1+w-c\,\varepsilon)\right)}{w^3\,(1+w-c\,\varepsilon)^2}$
17	$\sum_{n=2}^{\infty} \frac{\varepsilon^{-1+n}\, dP[n,2]}{-1+n}$	$-2\,s-\frac{2\,s}{w^3}-\frac{2\,s^3\,(1+w)^6}{c^2\,w^3\,(1+w-c\,\varepsilon)^3}+\frac{s\,(1+w)^4\left(2\,c^2\,w^2+3\,s^2\,(-1+w\,(2+w))\right)}{c^2\,w^4\,(1+w-c\,\varepsilon)^2}+$ $\frac{s\,(1+w)^2\left(2\,c^2\,w^2\,(-1+2\,w)+s^2\left(3-6\,w+6\,w^3\right)\right)}{c^2\,w^5\,(-1-w+c\,\varepsilon)}+\frac{s^3\left(3-w^2\left(4+w^3\right)+3\,c\,\varepsilon\right)}{c^2\,w^5}$
18	$\sum_{n=2}^{\infty} \frac{\varepsilon^{-1+n}\, dP[n,2]}{1+n}$	$-\frac{3\,s\,(-1+c\,\varepsilon)}{w^5}-\frac{2\,s\left(1+\frac{w\,(1+w)^2}{1+w-c\,\varepsilon}\right)}{w^3\,(1+w-c\,\varepsilon)}$
19	$\sum_{n=2}^{\infty} \frac{\varepsilon^{-1+n}\, dP[n,2]}{n^2}$	$\frac{s}{w^3}+\frac{2\,c\,(1-c\,\varepsilon)}{s^3\,w\,\varepsilon}+\frac{\left(1+c^2\right)(1+w)}{s\,w\,(1+w-c\,\varepsilon)}-\frac{2\left(\left(1+c^2\right)\mathrm{Log}\left[\frac{1+c}{c+w-\varepsilon}\right]+c\left(1+2\,\mathrm{Log}\left[\frac{1}{2}\,(1+w-c\,\varepsilon)\right]\right)\right)}{s^3\,\varepsilon}$