```
K[n_] := If[n == 1, 0, FullSimplify[MangoldtLambda[n] / Log[n]]]
P[n_, k_] := P[n, k] = Sum[ K[j] P[Floor[n / j], k - 1], {j, 2, n}]; P[n_, 0] := 1
D2[n_, k_] := D2[n, k] = Sum[D2[Floor[n / j], k - 1], {j, 2, n}]; D2[n_, 0] := 1
bins[ z_, a_] := Product[ (z - k), {k, 0, a - 1}] / a!
DD[n_, z_] := Sum[bins[z, a] D2[n, a], {a, 0, Log[2, n]}]
P[n_, k_, s_] := P[n, k, s] = Sum[ j^-s K[j] P[Floor[n / j], k - 1, s], {j, 2, n}];
P[n_, 0, s_] := 1
DDa[n_, z_] := Sum[ z^k / k! P[n, k], {k, 0, Log[2, n]}]
DDa[n_, z_, s_] := Sum[ z^k / k! P[n, k, s], {k, 0, Log[2, n]}]
DDa2[n_, z_] := Sum[ z^k / k! P[n, k] / z, {k, 0, Log[2, n]}]


Expand[D[DD[100, z], z]]
```

$$\frac{428}{15}+\frac{16\,289\,z}{180}+\frac{993\,z^2}{16}+\frac{611\,z^3}{36}+\frac{67\,z^4}{48}+\frac{7\,z^5}{120}$$

```
Roots[ Expand[D[DD[10, z], z]] == 0, z]
```

$$z==\frac{1}{3}\left(-21-\sqrt{345}\right)\ ||\ z==\frac{1}{3}\left(-21+\sqrt{345}\right)$$

```
Table[{n, Expand[Roots[ Expand[D[DD[n, x], x]] == 0, x]]}, {n, 2, 16}] // TableForm
```

2	False
3	False
4	$x==-\frac{5}{2}$
5	$x==-\frac{7}{2}$
6	$x==-\frac{7}{6}$
7	$x==-\frac{3}{2}$
8	$x==-4-\sqrt{\frac{19}{3}}\ ||\ x==-4+\sqrt{\frac{19}{3}}$
9	$x==-5-\sqrt{\frac{43}{3}}\ ||\ x==-5+\sqrt{\frac{43}{3}}$
10	$x==-7-\sqrt{\frac{115}{3}}\ ||\ x==-7+\sqrt{\frac{115}{3}}$
11	$x==-7-\sqrt{\frac{109}{3}}\ ||\ x==-7+\sqrt{\frac{109}{3}}$
12	$x==-2-\sqrt{\frac{5}{6}}\ ||\ x==-2+\sqrt{\frac{5}{6}}$
13	$x==-2-\frac{1}{\sqrt{3}}\ ||\ x==-2+\frac{1}{\sqrt{3}}$
14	$x==-\frac{5}{2}-\frac{\sqrt{\frac{31}{3}}}{2}\ ||\ x==-\frac{5}{2}+\frac{\sqrt{\frac{31}{3}}}{2}$
15	$x==-3-\frac{4}{\sqrt{3}}\ ||\ x==-3+\frac{4}{\sqrt{3}}$
16	$x==-\frac{11}{2}+\frac{1}{6}\left(5184-3\sqrt{2\,539\,353}\right)^{1/3}+\frac{\left(1728+\sqrt{2\,539\,353}\right)^{1/3}}{2\times 3^{2/3}}\ ||\ x==-\frac{11}{2}-\frac{1}{12}\left(5184-3\sqrt{2\,539\,353}\right)^{1/3}-$

```
Expand[D[DD[10, z], z]]
```

$$\frac{16}{3}+7\,z+\frac{z^2}{2}$$

```
f[z_] := 16/3 + 7 z + z^2/2
```

```
f[0]
```

$$\frac{16}{3}$$

```
f2[z_] := FullSimplify[(z - (-7 - Sqrt[115/3])) (z - (-7 + Sqrt[115/3]))] / 2
```

```
f2[0]
```

$$\frac{16}{3}$$

```
FullSimplify[(-7 - Sqrt[115/3]) (-7 + Sqrt[115/3]) / 2]
```

$$\frac{16}{3}$$

```
Expand[D[DD[13, z], z]]
```

$$\frac{22}{3} + 8\,z + 2\,z^2$$

```
f3[z_] := 22/3 + 8 z + 2 z^2
```

```
f4[z_] := FullSimplify[2 (z - (-2 - 1/Sqrt[3])) (z - (-2 + 1/Sqrt[3]))]
```

```
f3[1]
```

$$\frac{52}{3}$$

```
f4[1]
```

$$\frac{52}{3}$$

```
Expand[D[DD[15, z], z]]
```

$$\frac{22}{3} + 12\,z + 2\,z^2$$

```
f5[z_] := 22/3 + 12 z + 2 z^2
```

```
f6[z_] := FullSimplify[2 (z - (-3 - 4/Sqrt[3])) (z - (-3 + 4/Sqrt[3]))]
```

```
f5[-3]
```

$$-\frac{32}{3}$$

```
f6[-3]
```

$$-\frac{32}{3}$$

```
N[Roots[ Expand[D[DD[100, x], x]] == 0, x]]
```

```
x == -0.425539 || x == -9.59257 - 10.0056 i ||
 x == -9.59257 + 10.0056 i || x == -2.15895 - 1.14966 i || x == -2.15895 + 1.14966 i
```

```
f7[z_] :=
 FullSimplify[(z - (-0.425539418089958)) (z - (-9.592566044154667 - 10.00556445690649 i))
    (z - (-9.592566044154667 + 10.00556445690649 i))
    (z - (-2.1589499610860696 - 1.1496632937798965 i))
    (z - (-2.1589499610860696 + 1.1496632937798965 i)) (7 / 120)]
```

```
f7[1]
```

```
199.517 + 0. i
```

```
Expand[D[DD[100, z], z]] /. z → 1.
```

```
199.517
```

```
(- (-0.425539418089958)) (- (-9.592566044154667 - 10.00556445690649 i))
 (- (-9.592566044154667 + 10.00556445690649 i))
 (- (-2.1589499610860696 - 1.1496632937798965 i))
 (- (-2.1589499610860696 + 1.1496632937798965 i)) (7 / 120)
```

```
28.5333 + 0. i
```

```
Table[{n, N[Roots[ Expand[D[DD[n, x], x]] == 0, x]]}, {n, 2, 110}] // TableForm
```

```
2     False
3     False
4     x == -2.5
5     x == -3.5
6     x == -1.16667
7     x == -1.5
8     x == -6.51661 || x == -1.48339
9     x == -8.78594 || x == -1.21406
10    x == -13.1914 || x == -0.808608
11    x == -13.0277 || x == -0.972286
12    x == -2.91287 || x == -1.08713
13    x == -2.57735 || x == -1.42265
14    x == -4.10728 || x == -0.892725
15    x == -5.3094 || x == -0.690599
16    x == -0.682041 || x == -7.90898 + 2.0395 i || x == -7.90898 - 2.0395 i
17    x == -0.791494 || x == -7.85425 + 1.8378 i || x == -7.85425 - 1.8378 i
18    x == -0.811453 - 1.77636 × 10^-15 i || x == -2.91482 + 1.77636 × 10^-15 i || x == -21.7737 - 3.33067 ×
19    x == -0.958823 - 1.77636 × 10^-15 i || x == -2.75229 + 2.66454 × 10^-15 i || x == -21.7889 - 4.44089 ×
20    x == -1.07047 + 1.77636 × 10^-15 i || x == -1.69249 + 0. i || x == -31.737 - 1.11022 × 10^-15 i
21    x == -0.757018 - 3.55271 × 10^-15 i || x == -2.42534 + 3.55271 × 10^-15 i || x == -31.3176 - 7.21645 ×
22    x == -0.622137 - 3.55271 × 10^-15 i || x == -2.99246 + 3.55271 × 10^-15 i || x == -30.8854 + 0. i
23    x == -0.709221 - 1.77636 × 10^-15 i || x == -2.89827 + 0. i || x == -30.8925 - 3.33067 × 10^-16 i
24    x == -0.713384 || x == -3.99331 + 1.36234 i || x == -3.99331 - 1.36234 i
25    x == -0.695008 || x == -4.0025 + 1.76536 i || x == -4.0025 - 1.76536 i
```

```
26  x == -0.597522 || x == -4.05124 - 2.41786 i || x == -4.05124 + 2.41786 i
27  x == -0.591904 || x == -4.35405 + 2.04644 i || x == -4.35405 - 2.04644 i
28  x == -0.58734 + 0. i || x == -3.18184 + 8.88178 × 10^-16 i || x == -7.33082 - 5.55112 × 10^-16 i
29  x == -0.658618 - 3.55271 × 10^-16 i || x == -3.06837 + 4.44089 × 10^-16 i || x == -7.37301 - 1.11022 ×
30  x == -0.825848 - 3.55271 × 10^-16 i || x == -1.45246 + 4.44089 × 10^-16 i || x == -12.4217 - 1.66533 ×
31  x == -12.4311 || x == -1.13445 - 0.090378 i || x == -1.13445 + 0.090378 i
32  x == -12.8711 - 9.48345 i || x == -12.8711 + 9.48345 i || x == -1.12888 - 0.0646669 i || x == -1.1
33  x == -12.7505 - 9.34829 i || x == -12.7505 + 9.34829 i || x == -1.75333 || x == -0.745656
34  x == -12.6234 - 9.20877 i || x == -12.6234 + 9.20877 i || x == -2.12266 || x == -0.630585
35  x == -12.4889 - 9.06456 i || x == -12.4889 + 9.06456 i || x == -2.46574 || x == -0.556552
36  x == -3.47402 - 1.05319 i || x == -3.47402 + 1.05319 i || x == -44.4946 || x == -0.557345
37  x == -3.4447 - 0.962549 i || x == -3.4447 + 0.962549 i || x == -44.4943 || x == -0.616312
38  x == -3.46269 - 1.51527 i || x == -3.46269 + 1.51527 i || x == -44.5231 || x == -0.551514
39  x == -3.47306 - 1.90322 i || x == -3.47306 + 1.90322 i || x == -44.5519 || x == -0.502027
40  x == -2.75817 - 1.92535 i || x == -2.75817 + 1.92535 i || x == -61.9835 || x == -0.500208
41  x == -2.73552 - 1.8972 i || x == -2.73552 + 1.8972 i || x == -61.9833 || x == -0.545619
42  x == -2.37767 + 5.72545 × 10^-17 i || x == -0.596711 + 5.72545 × 10^-17 i || x == -60.6715 + 5.82925 ×
43  x == -2.2597 - 5.71533 × 10^-17 i || x == -0.659723 - 5.71533 × 10^-17 i || x == -60.6714 - 5.99237 × 1
44  x == -1.82871 + 0. i || x == -0.659234 + 0. i || x == -59.9985 + 0. i || x == -5.51354 + 0. i
45  x == -1.5826 - 1.04521 × 10^-15 i || x == -0.658671 + 8.7741 × 10^-16 i || x == -59.3081 - 1.17059 × 10
46  x == -1.86433 - 8.31462 × 10^-16 i || x == -0.578485 + 5.50011 × 10^-16 i || x == -59.324 - 9.83954 × 1
47  x == -1.78668 - 8.29534 × 10^-16 i || x == -0.638092 + 7.17018 × 10^-16 i || x == -59.3239 + 6.05237 ×
48  x == -6.45024 - 4.45679 i || x == -6.45024 + 4.45679 i || x == -1.79377 || x == -0.639094
49  x == -6.39966 - 4.4057 i || x == -6.39966 + 4.4057 i || x == -1.9033 || x == -0.630726
50  x == -6.51664 - 5.14835 i || x == -6.51664 + 5.14835 i || x == -1.67147 || x == -0.628589
51  x == -6.42459 - 5.07186 i || x == -6.42459 + 5.07186 i || x == -1.92114 || x == -0.563001
52  x == -6.52532 - 5.71546 i || x == -6.52532 + 5.71546 i || x == -1.72412 || x == -0.55858
53  x == -6.53097 - 5.7151 i || x == -6.53097 + 5.7151 i || x == -1.65964 || x == -0.611745
54  x == -7.86346 - 3.66074 i || x == -7.86346 + 3.66074 i || x == -1.66129 || x == -0.611796
55  x == -7.77276 - 3.51817 i || x == -7.77276 + 3.51817 i || x == -1.90227 || x == -0.552216
56  x == -1.93343 - 2.53528 × 10^-16 i || x == -0.551142 + 2.28381 × 10^-16 i || x == -12.3907 - 3.78971 ×
57  x == -2.22686 - 6.58137 × 10^-16 i || x == -0.505997 + 6.32169 × 10^-16 i || x == -12.5085 - 1.43757 ×
58  x == -2.57902 + 3.09676 × 10^-16 i || x == -0.470109 - 7.43212 × 10^-16 i || x == -12.6199 + 2.45899 ×
59  x == -2.50106 + 1.41729 × 10^-16 i || x == -0.505559 - 3.03362 × 10^-16 i || x == -12.6156 + 8.08164 ×
60  x == -2.16114 - 1.39556 i || x == -2.16114 + 1.39556 i || x == -23.8343 || x == -0.510129
61  x == -2.14245 - 1.37056 i || x == -2.14245 + 1.37056 i || x == -23.8339 || x == -0.54788
62  x == -2.15302 - 1.52188 i || x == -2.15302 + 1.52188 i || x == -23.8512 || x == -0.509437
63  x == -2.30762 - 1.33214 i || x == -2.30762 + 1.33214 i || x == -23.5462 || x == -0.505271
64  x == -0.504138 || x == -18.6969 - 19.151 i || x == -18.6969 + 19.151 i || x == -2.30101 - 1.33325
65  x == -0.472457 || x == -18.7068 - 19.1494 i || x == -18.7068 + 19.1494 i || x == -2.307 - 1.4903 i
66  x == -0.495454 || x == -18.3726 - 18.9112 i || x == -18.3726 + 18.9112 i || x == -2.62963 - 0.7071
67  x == -0.531673 || x == -18.3725 - 18.9114 i || x == -18.3725 + 18.9114 i || x == -2.61163 - 0.6433
68  x == -3.37209 || x == -2.19619 || x == -0.527566 || x == -18.2021 - 18.7908 i || x == -18.2021 + 18
69  x == -0.491535 || x == -18.2128 - 18.7885 i || x == -18.2128 + 18.7885 i || x == -2.79144 - 0.3916
70  x == -4.60733 || x == -1.68842 || x == -0.518903 || x == -17.8427 - 18.5493 i || x == -17.8427 + 18
71  x == -4.6265 || x == -1.62861 || x == -0.55977 || x == -17.8426 - 18.5495 i || x == -17.8426 + 18.5
72  x == -79.7862 || x == -1.63197 || x == -0.560293 || x == -5.26079 - 3.25908 i || x == -5.26079 + 3
73  x == -79.7862 || x == -1.56927 || x == -0.606045 || x == -5.26926 - 3.26151 i || x == -5.26926 + 3
74  x == -79.7856 || x == -1.77373 || x == -0.555524 || x == -5.19257 - 3.17855 i || x == -5.19257 + 3
75  x == -79.8186 || x == -1.6266 || x == -0.5518 || x == -5.25152 - 3.61886 i || x == -5.25152 + 3.618
76  x == -79.8514 || x == -1.51343 || x == -0.547911 || x == -5.29361 - 3.99825 i || x == -5.29361 + 3
77  x == -79.8509 || x == -1.67034 || x == -0.508542 || x == -5.23511 - 3.94397 i || x == -5.23511 + 3
78  x == -79.9171 || x == -1.34684 || x == -0.53963 || x == -5.34824 - 4.64389 i || x == -5.34824 + 4.6
79  x == -79.9171 || x == -1.29357 || x == -0.584458 || x == -5.35245 - 4.64392 i || x == -5.35245 + 4
```

```
80   x == -106.811 || x == -1.2894 || x == -0.584561 || x == -4.40755 - 4.27315 i || x == -4.40755 + 4.2
81   x == -106.612 || x == -1.2918 || x == -0.581543 || x == -4.50722 - 4.23571 i || x == -4.50722 + 4.2
82   x == -106.612 || x == -1.43203 || x == -0.534236 || x == -4.46087 - 4.20318 i || x == -4.46087 + 4
83   x == -106.612 || x == -1.38251 || x == -0.574506 || x == -4.4655 - 4.20247 i || x == -4.4655 + 4.2(
84   x == -104.069 || x == -1.55652 || x == -0.579433 || x == -5.64734 - 1.42495 i || x == -5.64734 + 1
85   x == -104.069 || x == -1.76055 || x == -0.536168 || x == -5.56708 - 1.19136 i || x == -5.56708 + 1
86   x == -104.069 || x == -1.98671 || x == -0.502025 || x == -5.47119 - 0.861203 i || x == -5.47119 + (
87   x == -104.069 || x == -5.55982 || x == -5.13671 || x == -2.26101 || x == -0.473811
88   x == -103.202 || x == -8.05846 || x == -3.342 || x == -2.42485 || x == -0.472433
89   x == -103.202 || x == -8.05218 || x == -3.42946 || x == -2.31538 || x == -0.500712
90   x == -100.457 || x == -12.4435 || x == -0.504364 || x == -2.04775 - 1.02334 i || x == -2.04775 + 1
91   x == -100.456 || x == -12.4695 || x == -0.477127 || x == -2.04855 - 1.15395 i || x == -2.04855 + 1
92   x == -100.477 || x == -12.2358 || x == -0.473527 || x == -2.15661 - 1.01214 i || x == -2.15661 + 1
93   x == -100.477 || x == -12.2632 || x == -0.45024 || x == -2.15468 - 1.14584 i || x == -2.15468 + 1.1
94   x == -100.477 || x == -12.2904 || x == -0.429914 || x == -2.15141 - 1.26288 i || x == -2.15141 + 1
95   x == -100.477 || x == -12.3172 || x == -0.411914 || x == -2.14711 - 1.36789 i || x == -2.14711 + 1
96   x == -0.411442 || x == -9.60927 - 9.0899 i || x == -9.60927 + 9.0899 i || x == -2.1493 - 1.39183 i
97   x == -0.432477 || x == -9.60897 - 9.09033 i || x == -9.60897 + 9.09033 i || x == -2.13908 - 1.3742
98   x == -0.429214 || x == -9.49511 - 9.01607 i || x == -9.49511 + 9.01607 i || x == -2.25457 - 1.2506
99   x == -0.425929 || x == -9.37569 - 8.94212 i || x == -9.37569 + 8.94212 i || x == -2.37563 - 1.0943
100  x == -0.425539 || x == -9.59257 - 10.0056 i || x == -9.59257 + 10.0056 i || x == -2.15895 - 1.1496
101  x == -0.447488 || x == -9.59239 - 10.0059 i || x == -9.59239 + 10.0059 i || x == -2.14816 - 1.1287
102  x == -0.46202 || x == -9.37867 - 9.89563 i || x == -9.37867 + 9.89563 i || x == -2.35461 - 0.59242
103  x == -0.487258 || x == -9.37849 - 9.89603 i || x == -9.37849 + 9.89603 i || x == -2.34216 - 0.5414
104  x == -0.486061 || x == -9.48536 - 10.527 i || x == -9.48536 + 10.527 i || x == -2.23589 - 0.603318
105  x == -3.19822 || x == -1.65592 || x == -0.506616 || x == -9.28391 - 10.4354 i || x == -9.28391 + 10
106  x == -2.98984 || x == -1.87231 || x == -0.479082 || x == -9.29367 - 10.4308 i || x == -9.29367 + 10
107  x == -3.0291 || x == -1.80611 || x == -0.506244 || x == -9.29356 - 10.4312 i || x == -9.29356 + 10
108  x == -3.48818 || x == -1.8028 || x == -0.506413 || x == -12.637 - 3.17055 i || x == -12.637 + 3.17(
109  x == -3.52364 || x == -1.74109 || x == -0.535694 || x == -12.6355 - 3.16928 i || x == -12.6355 + 3
110  x == -4.79469 || x == -1.35426 || x == -0.56616 || x == -12.1782 - 1.84407 i || x == -12.1782 + 1.8
```

```
Table[{n, Expand[D[DD[n, z], z]]}, {n, 2, 110}] // TableForm
```

2	1
3	2
4	$\frac{5}{2} + z$
5	$\frac{7}{2} + z$
6	$\frac{7}{2} + 3\,z$
7	$\frac{9}{2} + 3\,z$
8	$\frac{29}{6} + 4\,z + \frac{z^2}{2}$
9	$\frac{16}{3} + 5\,z + \frac{z^2}{2}$
10	$\frac{16}{3} + 7\,z + \frac{z^2}{2}$
11	$\frac{19}{3} + 7\,z + \frac{z^2}{2}$
12	$\frac{19}{3} + 8\,z + 2\,z^2$
13	$\frac{22}{3} + 8\,z + 2\,z^2$
14	$\frac{22}{3} + 10\,z + 2\,z^2$
15	$\frac{22}{3} + 12\,z + 2\,z^2$
16	$\frac{91}{12} + \frac{155\,z}{12} + \frac{11\,z^2}{4} + \frac{z^3}{6}$
17	$\frac{103}{12} + \frac{155\,z}{12} + \frac{11\,z^2}{4} + \frac{z^3}{6}$

18 $\frac{103}{12} + \frac{167\,z}{12} + \frac{17\,z^2}{4} + \frac{z^3}{6}$

19 $\frac{115}{12} + \frac{167\,z}{12} + \frac{17\,z^2}{4} + \frac{z^3}{6}$

20 $\frac{115}{12} + \frac{179\,z}{12} + \frac{23\,z^2}{4} + \frac{z^3}{6}$

21 $\frac{115}{12} + \frac{203\,z}{12} + \frac{23\,z^2}{4} + \frac{z^3}{6}$

22 $\frac{115}{12} + \frac{227\,z}{12} + \frac{23\,z^2}{4} + \frac{z^3}{6}$

23 $\frac{127}{12} + \frac{227\,z}{12} + \frac{23\,z^2}{4} + \frac{z^3}{6}$

24 $\frac{127}{12} + \frac{235\,z}{12} + \frac{29\,z^2}{4} + \frac{5\,z^3}{6}$

25 $\frac{133}{12} + \frac{247\,z}{12} + \frac{29\,z^2}{4} + \frac{5\,z^3}{6}$

26 $\frac{133}{12} + \frac{271\,z}{12} + \frac{29\,z^2}{4} + \frac{5\,z^3}{6}$

27 $\frac{137}{12} + \frac{283\,z}{12} + \frac{31\,z^2}{4} + \frac{5\,z^3}{6}$

28 $\frac{137}{12} + \frac{295\,z}{12} + \frac{37\,z^2}{4} + \frac{5\,z^3}{6}$

29 $\frac{149}{12} + \frac{295\,z}{12} + \frac{37\,z^2}{4} + \frac{5\,z^3}{6}$

30 $\frac{149}{12} + \frac{295\,z}{12} + \frac{49\,z^2}{4} + \frac{5\,z^3}{6}$

31 $\frac{161}{12} + \frac{295\,z}{12} + \frac{49\,z^2}{4} + \frac{5\,z^3}{6}$

32 $\frac{817}{60} + \frac{305\,z}{12} + \frac{105\,z^2}{8} + \frac{7\,z^3}{6} + \frac{z^4}{24}$

33 $\frac{817}{60} + \frac{329\,z}{12} + \frac{105\,z^2}{8} + \frac{7\,z^3}{6} + \frac{z^4}{24}$

34 $\frac{817}{60} + \frac{353\,z}{12} + \frac{105\,z^2}{8} + \frac{7\,z^3}{6} + \frac{z^4}{24}$

35 $\frac{817}{60} + \frac{377\,z}{12} + \frac{105\,z^2}{8} + \frac{7\,z^3}{6} + \frac{z^4}{24}$

36 $\frac{817}{60} + \frac{383\,z}{12} + \frac{117\,z^2}{8} + \frac{13\,z^3}{6} + \frac{z^4}{24}$

37 $\frac{877}{60} + \frac{383\,z}{12} + \frac{117\,z^2}{8} + \frac{13\,z^3}{6} + \frac{z^4}{24}$

38 $\frac{877}{60} + \frac{407\,z}{12} + \frac{117\,z^2}{8} + \frac{13\,z^3}{6} + \frac{z^4}{24}$

39 $\frac{877}{60} + \frac{431\,z}{12} + \frac{117\,z^2}{8} + \frac{13\,z^3}{6} + \frac{z^4}{24}$

40 $\frac{877}{60} + \frac{439\,z}{12} + \frac{129\,z^2}{8} + \frac{17\,z^3}{6} + \frac{z^4}{24}$

41 $\frac{937}{60} + \frac{439\,z}{12} + \frac{129\,z^2}{8} + \frac{17\,z^3}{6} + \frac{z^4}{24}$

42 $\frac{937}{60} + \frac{439\,z}{12} + \frac{153\,z^2}{8} + \frac{17\,z^3}{6} + \frac{z^4}{24}$

43 $\frac{997}{60} + \frac{439\,z}{12} + \frac{153\,z^2}{8} + \frac{17\,z^3}{6} + \frac{z^4}{24}$

44 $\frac{997}{60} + \frac{451\,z}{12} + \frac{165\,z^2}{8} + \frac{17\,z^3}{6} + \frac{z^4}{24}$

45 $\frac{997}{60} + \frac{463\,z}{12} + \frac{177\,z^2}{8} + \frac{17\,z^3}{6} + \frac{z^4}{24}$

46 $\frac{997}{60} + \frac{487\,z}{12} + \frac{177\,z^2}{8} + \frac{17\,z^3}{6} + \frac{z^4}{24}$

47 $\frac{1057}{60} + \frac{487\,z}{12} + \frac{177\,z^2}{8} + \frac{17\,z^3}{6} + \frac{z^4}{24}$

48 $\frac{1057}{60} + \frac{493\,z}{12} + \frac{47\,z^2}{2} + \frac{23\,z^3}{6} + \frac{z^4}{4}$

49 $\frac{1087}{60} + \frac{505\,z}{12} + \frac{47\,z^2}{2} + \frac{23\,z^3}{6} + \frac{z^4}{4}$

50 $\frac{1087}{60} + \frac{517\,z}{12} + 25\,z^2 + \frac{23\,z^3}{6} + \frac{z^4}{4}$

51 $\frac{1087}{60} + \frac{541\,z}{12} + 25\,z^2 + \frac{23\,z^3}{6} + \frac{z^4}{4}$

52 $\frac{1087}{60} + \frac{553\,z}{12} + \frac{53\,z^2}{2} + \frac{23\,z^3}{6} + \frac{z^4}{4}$

53 $\frac{1147}{60} + \frac{553\,z}{12} + \frac{53\,z^2}{2} + \frac{23\,z^3}{6} + \frac{z^4}{4}$

54 $\frac{1147}{60} + \frac{187\,z}{4} + 28\,z^2 + \frac{9\,z^3}{2} + \frac{z^4}{4}$

55 $\frac{1147}{60} + \frac{195\,z}{4} + 28\,z^2 + \frac{9\,z^3}{2} + \frac{z^4}{4}$

56 $\frac{1147}{60} + \frac{593\,z}{12} + \frac{59\,z^2}{2} + \frac{31\,z^3}{6} + \frac{z^4}{4}$

57 $\frac{1147}{60} + \frac{617\,z}{12} + \frac{59\,z^2}{2} + \frac{31\,z^3}{6} + \frac{z^4}{4}$

58 $\frac{1147}{60} + \frac{641\,z}{12} + \frac{59\,z^2}{2} + \frac{31\,z^3}{6} + \frac{z^4}{4}$

59 $\frac{1207}{60} + \frac{641\,z}{12} + \frac{59\,z^2}{2} + \frac{31\,z^3}{6} + \frac{z^4}{4}$

60 $\frac{1207}{60} + \frac{641\,z}{12} + 31\,z^2 + \frac{43\,z^3}{6} + \frac{z^4}{4}$

61 $\frac{1267}{60} + \frac{641\,z}{12} + 31\,z^2 + \frac{43\,z^3}{6} + \frac{z^4}{4}$

62 $\frac{1267}{60} + \frac{665\,z}{12} + 31\,z^2 + \frac{43\,z^3}{6} + \frac{z^4}{4}$

63 $\frac{1267}{60} + \frac{677\,z}{12} + \frac{65\,z^2}{2} + \frac{43\,z^3}{6} + \frac{z^4}{4}$

64 $\frac{1277}{60} + \frac{2573\,z}{45} + \frac{535\,z^2}{16} + \frac{275\,z^3}{36} + \frac{17\,z^4}{48} + \frac{z^5}{120}$

65 $\frac{1277}{60} + \frac{2663\,z}{45} + \frac{535\,z^2}{16} + \frac{275\,z^3}{36} + \frac{17\,z^4}{48} + \frac{z^5}{120}$

66 $\frac{1277}{60} + \frac{2663\,z}{45} + \frac{583\,z^2}{16} + \frac{275\,z^3}{36} + \frac{17\,z^4}{48} + \frac{z^5}{120}$

67 $\frac{1337}{60} + \frac{2663\,z}{45} + \frac{583\,z^2}{16} + \frac{275\,z^3}{36} + \frac{17\,z^4}{48} + \frac{z^5}{120}$

68 $\frac{1337}{60} + \frac{2708\,z}{45} + \frac{607\,z^2}{16} + \frac{275\,z^3}{36} + \frac{17\,z^4}{48} + \frac{z^5}{120}$

69 $\frac{1337}{60} + \frac{2798\,z}{45} + \frac{607\,z^2}{16} + \frac{275\,z^3}{36} + \frac{17\,z^4}{48} + \frac{z^5}{120}$

70 $\frac{1337}{60} + \frac{2798\,z}{45} + \frac{655\,z^2}{16} + \frac{275\,z^3}{36} + \frac{17\,z^4}{48} + \frac{z^5}{120}$

71 $\frac{1397}{60} + \frac{2798\,z}{45} + \frac{655\,z^2}{16} + \frac{275\,z^3}{36} + \frac{17\,z^4}{48} + \frac{z^5}{120}$

72 $\frac{1397}{60} + \frac{2813\,z}{45} + \frac{675\,z^2}{16} + \frac{323\,z^3}{36} + \frac{37\,z^4}{48} + \frac{z^5}{120}$

73 $\frac{1457}{60} + \frac{2813\,z}{45} + \frac{675\,z^2}{16} + \frac{323\,z^3}{36} + \frac{37\,z^4}{48} + \frac{z^5}{120}$

74 $\frac{1457}{60} + \frac{2903\,z}{45} + \frac{675\,z^2}{16} + \frac{323\,z^3}{36} + \frac{37\,z^4}{48} + \frac{z^5}{120}$

75 $\frac{1457}{60} + \frac{2948\,z}{45} + \frac{699\,z^2}{16} + \frac{323\,z^3}{36} + \frac{37\,z^4}{48} + \frac{z^5}{120}$

76 $\frac{1457}{60} + \frac{2993\,z}{45} + \frac{723\,z^2}{16} + \frac{323\,z^3}{36} + \frac{37\,z^4}{48} + \frac{z^5}{120}$

77 $\frac{1457}{60} + \frac{3083\,z}{45} + \frac{723\,z^2}{16} + \frac{323\,z^3}{36} + \frac{37\,z^4}{48} + \frac{z^5}{120}$

78 $\frac{1457}{60} + \frac{3083\,z}{45} + \frac{771\,z^2}{16} + \frac{323\,z^3}{36} + \frac{37\,z^4}{48} + \frac{z^5}{120}$

79 $\frac{1517}{60} + \frac{3083\,z}{45} + \frac{771\,z^2}{16} + \frac{323\,z^3}{36} + \frac{37\,z^4}{48} + \frac{z^5}{120}$

80 $\frac{1517}{60} + \frac{6211\,z}{90} + \frac{793\,z^2}{16} + \frac{359\,z^3}{36} + \frac{47\,z^4}{48} + \frac{z^5}{120}$

81 $\frac{383}{15} + \frac{12\,587\,z}{180} + \frac{805\,z^2}{16} + \frac{365\,z^3}{36} + \frac{47\,z^4}{48} + \frac{z^5}{120}$

82 $\frac{383}{15} + \frac{12\,947\,z}{180} + \frac{805\,z^2}{16} + \frac{365\,z^3}{36} + \frac{47\,z^4}{48} + \frac{z^5}{120}$

83 $\frac{398}{15} + \frac{12\,947\,z}{180} + \frac{805\,z^2}{16} + \frac{365\,z^3}{36} + \frac{47\,z^4}{48} + \frac{z^5}{120}$

84 $\frac{398}{15} + \frac{12\,947\,z}{180} + \frac{829\,z^2}{16} + \frac{437\,z^3}{36} + \frac{47\,z^4}{48} + \frac{z^5}{120}$

85 $\frac{398}{15} + \frac{13\,307\,z}{180} + \frac{829\,z^2}{16} + \frac{437\,z^3}{36} + \frac{47\,z^4}{48} + \frac{z^5}{120}$

86 $\frac{398}{15} + \frac{13\,667\,z}{180} + \frac{829\,z^2}{16} + \frac{437\,z^3}{36} + \frac{47\,z^4}{48} + \frac{z^5}{120}$

87 $\frac{398}{15} + \frac{14\,027\,z}{180} + \frac{829\,z^2}{16} + \frac{437\,z^3}{36} + \frac{47\,z^4}{48} + \frac{z^5}{120}$

88 $\frac{398}{15} + \frac{14\,147\,z}{180} + \frac{853\,z^2}{16} + \frac{461\,z^3}{36} + \frac{47\,z^4}{48} + \frac{z^5}{120}$

89 $\frac{413}{15} + \frac{14\,147\,z}{180} + \frac{853\,z^2}{16} + \frac{461\,z^3}{36} + \frac{47\,z^4}{48} + \frac{z^5}{120}$

90 $\frac{413}{15} + \frac{14\,147\,z}{180} + \frac{877\,z^2}{16} + \frac{533\,z^3}{36} + \frac{47\,z^4}{48} + \frac{z^5}{120}$

91 $\frac{413}{15} + \frac{14\,507\,z}{180} + \frac{877\,z^2}{16} + \frac{533\,z^3}{36} + \frac{47\,z^4}{48} + \frac{z^5}{120}$

92 $\frac{413}{15} + \frac{14\,687\,z}{180} + \frac{901\,z^2}{16} + \frac{533\,z^3}{36} + \frac{47\,z^4}{48} + \frac{z^5}{120}$

93 $\frac{413}{15} + \frac{15\,047\,z}{180} + \frac{901\,z^2}{16} + \frac{533\,z^3}{36} + \frac{47\,z^4}{48} + \frac{z^5}{120}$

94 $\frac{413}{15} + \frac{15\,407\,z}{180} + \frac{901\,z^2}{16} + \frac{533\,z^3}{36} + \frac{47\,z^4}{48} + \frac{z^5}{120}$

95 $\frac{413}{15} + \frac{15\,767\,z}{180} + \frac{901\,z^2}{16} + \frac{533\,z^3}{36} + \frac{47\,z^4}{48} + \frac{z^5}{120}$

96 $\frac{413}{15} + \frac{15\,839\,z}{180} + \frac{921\,z^2}{16} + \frac{575\,z^3}{36} + \frac{67\,z^4}{48} + \frac{7\,z^5}{120}$

97 $\frac{428}{15} + \frac{15\,839\,z}{180} + \frac{921\,z^2}{16} + \frac{575\,z^3}{36} + \frac{67\,z^4}{48} + \frac{7\,z^5}{120}$

98 $\frac{428}{15} + \frac{16\,019\,z}{180} + \frac{945\,z^2}{16} + \frac{575\,z^3}{36} + \frac{67\,z^4}{48} + \frac{7\,z^5}{120}$

99 $\frac{428}{15} + \frac{16\,199\,z}{180} + \frac{969\,z^2}{16} + \frac{575\,z^3}{36} + \frac{67\,z^4}{48} + \frac{7\,z^5}{120}$

100 $\frac{428}{15} + \frac{16\,289\,z}{180} + \frac{993\,z^2}{16} + \frac{611\,z^3}{36} + \frac{67\,z^4}{48} + \frac{7\,z^5}{120}$

101 $\frac{443}{15} + \frac{16\,289\,z}{180} + \frac{993\,z^2}{16} + \frac{611\,z^3}{36} + \frac{67\,z^4}{48} + \frac{7\,z^5}{120}$

102 $\frac{443}{15} + \frac{16\,289\,z}{180} + \frac{1041\,z^2}{16} + \frac{611\,z^3}{36} + \frac{67\,z^4}{48} + \frac{7\,z^5}{120}$

103 $\frac{458}{15} + \frac{16\,289\,z}{180} + \frac{1041\,z^2}{16} + \frac{611\,z^3}{36} + \frac{67\,z^4}{48} + \frac{7\,z^5}{120}$

104 $\frac{458}{15} + \frac{16\,409\,z}{180} + \frac{1065\,z^2}{16} + \frac{635\,z^3}{36} + \frac{67\,z^4}{48} + \frac{7\,z^5}{120}$

105 $\frac{458}{15} + \frac{16\,409\,z}{180} + \frac{1113\,z^2}{16} + \frac{635\,z^3}{36} + \frac{67\,z^4}{48} + \frac{7\,z^5}{120}$

106 $\frac{458}{15} + \frac{16\,769\,z}{180} + \frac{1113\,z^2}{16} + \frac{635\,z^3}{36} + \frac{67\,z^4}{48} + \frac{7\,z^5}{120}$

107 $\frac{473}{15} + \frac{16\,769\,z}{180} + \frac{1113\,z^2}{16} + \frac{635\,z^3}{36} + \frac{67\,z^4}{48} + \frac{7\,z^5}{120}$

108 $\frac{473}{15} + \frac{16\,829\,z}{180} + \frac{1133\,z^2}{16} + \frac{683\,z^3}{36} + \frac{29\,z^4}{16} + \frac{7\,z^5}{120}$

109 $\frac{488}{15} + \frac{16\,829\,z}{180} + \frac{1133\,z^2}{16} + \frac{683\,z^3}{36} + \frac{29\,z^4}{16} + \frac{7\,z^5}{120}$

110 $\frac{488}{15} + \frac{16\,829\,z}{180} + \frac{1181\,z^2}{16} + \frac{683\,z^3}{36} + \frac{29\,z^4}{16} + \frac{7\,z^5}{120}$