

Target equation:

$$\begin{aligned}
& -ia_1u^{(1,0)}(x,t)+a_{10}u^{(10,0)}(x,t)-ia_{11}u^{(11,0)}(x,t)+a_{12}u^{(12,0)}(x,t)-ia_{13}u^{(13,0)}(x,t)+a_{14}u^{(14,0)}(x,t)- \\
& ia_{15}u^{(15,0)}(x,t)+a_{16}u^{(16,0)}(x,t)-ia_{17}u^{(17,0)}(x,t)+a_{18}u^{(18,0)}(x,t)-ia_{19}u^{(19,0)}(x,t)+a_2u^{(2,0)}(x,t)+ \\
& a_{20}u^{(20,0)}(x,t)-ia_{21}u^{(21,0)}(x,t)+a_{22}u^{(22,0)}(x,t)-ia_{23}u^{(23,0)}(x,t)+a_{24}u^{(24,0)}(x,t)-ia_{25}u^{(25,0)}(x,t)+ \\
& a_{26}u^{(26,0)}(x,t)-ia_{27}u^{(27,0)}(x,t)+a_{28}u^{(28,0)}(x,t)-ia_{29}u^{(29,0)}(x,t)-ia_3u^{(3,0)}(x,t)+a_{30}u^{(30,0)}(x,t)- \\
& ia_{31}u^{(31,0)}(x,t)+a_{32}u^{(32,0)}(x,t)-ia_{33}u^{(33,0)}(x,t)+a_{34}u^{(34,0)}(x,t)-ia_{35}u^{(35,0)}(x,t)+a_{36}u^{(36,0)}(x,t)+ \\
& a_4u^{(4,0)}(x,t)-ia_5u^{(5,0)}(x,t)+a_6u^{(6,0)}(x,t)-ia_7u^{(7,0)}(x,t)+a_8u^{(8,0)}(x,t)-ia_9u^{(9,0)}(x,t)-bu(x,t)|u(x,t)|^2+ \\
& iu^{(0,1)}(x,t) = 0
\end{aligned}$$

Substitutions:

$$N = 18$$

$$u(x, t) \rightarrow y(z)e^{i(kx-\omega t)}$$

$$z \rightarrow x - C_0t$$

$$y(z) \rightarrow AR(z)^{18}$$

$$R'(z)^2 = R(z)^2 (1 - \chi R(z)^2)$$

Imaginary part of equation after substitutions:

$$\begin{aligned}
& 376992a_{36}y^{(5)}(z)k^{31}-324632a_{35}y^{(5)}(z)k^{30}-278256a_{34}y^{(5)}(z)k^{29}-8347680a_{36}y^{(7)}(z)k^{29}+237336a_{33}y^{(5)}(z)k^{28}- \\
& 6724520a_{35}y^{(7)}(z)k^{28}+201376a_{32}y^{(5)}(z)k^{27}+5379616a_{34}y^{(7)}(z)k^{27}+94143280a_{36}y^{(9)}(z)k^{27}- \\
& 169911a_{31}y^{(5)}(z)k^{26}-4272048a_{33}y^{(7)}(z)k^{26}-70607460a_{35}y^{(9)}(z)k^{26}-142506a_{30}y^{(5)}(z)k^{25}-3365856a_{32}y^{(7)}(z)k^{25}- \\
& 52451256a_{34}y^{(9)}(z)k^{25}-600805296a_{36}y^{(11)}(z)k^{25}+118755a_{29}y^{(5)}(z)k^{24}+2629575a_{31}y^{(7)}(z)k^{24}+ \\
& 38567100a_{33}y^{(9)}(z)k^{24}+417225900a_{35}y^{(11)}(z)k^{24}+98280a_{28}y^{(5)}(z)k^{23}+2035800a_{30}y^{(7)}(z)k^{23}+ \\
& 28048800a_{32}y^{(9)}(z)k^{23}+286097760a_{34}y^{(11)}(z)k^{23}+2310789600a_{36}y^{(13)}(z)k^{23}-80730a_{27}y^{(5)}(z)k^{22}- \\
& 1560780a_{29}y^{(7)}(z)k^{22}-20160075a_{31}y^{(9)}(z)k^{22}-193536720a_{33}y^{(11)}(z)k^{22}-1476337800a_{35}y^{(13)}(z)k^{22}- \\
& 65780a_{26}y^{(5)}(z)k^{21}-1184040a_{28}y^{(7)}(z)k^{21}-14307150a_{30}y^{(9)}(z)k^{21}-129024480a_{32}y^{(11)}(z)k^{21}- \\
& 927983760a_{34}y^{(13)}(z)k^{21}-5567902560a_{36}y^{(15)}(z)k^{21}+53130a_{25}y^{(5)}(z)k^{20}+888030a_{27}y^{(7)}(z)k^{20}+ \\
& 10015005a_{29}y^{(9)}(z)k^{20}+84672315a_{31}y^{(11)}(z)k^{20}+573166440a_{33}y^{(13)}(z)k^{20}+3247943160a_{35}y^{(15)}(z)k^{20}+ \\
& 42504a_{24}y^{(5)}(z)k^{19}+657800a_{26}y^{(7)}(z)k^{19}+6906900a_{28}y^{(9)}(z)k^{19}+54627300a_{30}y^{(11)}(z)k^{19}+347373600a_{32}y^{(13)}(z)k^{19}- \\
& 1855967520a_{34}y^{(15)}(z)k^{19}+8597496600a_{36}y^{(17)}(z)k^{19}-33649a_{23}y^{(5)}(z)k^{18}-480700a_{25}y^{(7)}(z)k^{18}- \\
& 4686825a_{27}y^{(9)}(z)k^{18}-34597290a_{29}y^{(11)}(z)k^{18}-206253075a_{31}y^{(13)}(z)k^{18}-1037158320a_{33}y^{(15)}(z)k^{18}- \\
& 4537567650a_{35}y^{(17)}(z)k^{18}-26334a_{22}y^{(5)}(z)k^{17}-346104a_{24}y^{(7)}(z)k^{17}-3124550a_{26}y^{(9)}(z)k^{17}- \\
& 21474180a_{28}y^{(11)}(z)k^{17}-119759850a_{30}y^{(13)}(z)k^{17}-565722720a_{32}y^{(15)}(z)k^{17}-2333606220a_{34}y^{(17)}(z)k^{17}- \\
& 8597496600a_{36}y^{(19)}(z)k^{17}+20349a_{21}y^{(5)}(z)k^{16}+245157a_{23}y^{(7)}(z)k^{16}+2042975a_{25}y^{(9)}(z)k^{16}+ \\
& 13037895a_{27}y^{(11)}(z)k^{16}+67863915a_{29}y^{(13)}(z)k^{16}+300540195a_{31}y^{(15)}(z)k^{16}+1166803110a_{33}y^{(17)}(z)k^{16}+ \\
& 4059928950a_{35}y^{(19)}(z)k^{16}+15504a_{20}y^{(5)}(z)k^{15}+170544a_{22}y^{(7)}(z)k^{15}+1307504a_{24}y^{(9)}(z)k^{15}+ \\
& 7726160a_{26}y^{(11)}(z)k^{15}+37442160a_{28}y^{(13)}(z)k^{15}+155117520a_{30}y^{(15)}(z)k^{15}+565722720a_{32}y^{(17)}(z)k^{15}+
\end{aligned}$$

$$\begin{aligned}
& 1855967520a_{34}y^{(19)}(z)k^{15} + 5567902560a_{36}y^{(21)}(z)k^{15} - 11628a_{19}y^{(5)}(z)k^{14} - 116280a_{21}y^{(7)}(z)k^{14} - \\
& 817190a_{23}y^{(9)}(z)k^{14} - 4457400a_{25}y^{(11)}(z)k^{14} - 20058300a_{27}y^{(13)}(z)k^{14} - 77558760a_{29}y^{(15)}(z)k^{14} - \\
& 265182525a_{31}y^{(17)}(z)k^{14} - 818809200a_{33}y^{(19)}(z)k^{14} - 2319959400a_{35}y^{(21)}(z)k^{14} - 8568a_{18}y^{(5)}(z)k^{13} - \blacksquare \\
& 77520a_{20}y^{(7)}(z)k^{13} - 497420a_{22}y^{(9)}(z)k^{13} - 2496144a_{24}y^{(11)}(z)k^{13} - 10400600a_{26}y^{(13)}(z)k^{13} - 37442160a_{28}y^{(15)}(z)k^{13} - \\
& 119759850a_{30}y^{(17)}(z)k^{13} - 347373600a_{32}y^{(19)}(z)k^{13} - 927983760a_{34}y^{(21)}(z)k^{13} - 2310789600a_{36}y^{(23)}(z)k^{13} + \blacksquare \\
& 6188a_{17}y^{(5)}(z)k^{12} + 50388a_{19}y^{(7)}(z)k^{12} + 293930a_{21}y^{(9)}(z)k^{12} + 1352078a_{23}y^{(11)}(z)k^{12} + 5200300a_{25}y^{(13)}(z)k^{12} + \\
& 17383860a_{27}y^{(15)}(z)k^{12} + 51895935a_{29}y^{(17)}(z)k^{12} + 141120525a_{31}y^{(19)}(z)k^{12} + 354817320a_{33}y^{(21)}(z)k^{12} + \blacksquare \\
& 834451800a_{35}y^{(23)}(z)k^{12} + 4368a_{16}y^{(5)}(z)k^{11} + 31824a_{18}y^{(7)}(z)k^{11} + 167960a_{20}y^{(9)}(z)k^{11} + 705432a_{22}y^{(11)}(z)k^{11} - \\
& 2496144a_{24}y^{(13)}(z)k^{11} + 7726160a_{26}y^{(15)}(z)k^{11} + 21474180a_{28}y^{(17)}(z)k^{11} + 54627300a_{30}y^{(19)}(z)k^{11} + \\
& 129024480a_{32}y^{(21)}(z)k^{11} + 286097760a_{34}y^{(23)}(z)k^{11} + 600805296a_{36}y^{(25)}(z)k^{11} - 3003a_{15}y^{(5)}(z)k^{10} - \blacksquare \\
& 19448a_{17}y^{(7)}(z)k^{10} - 92378a_{19}y^{(9)}(z)k^{10} - 352716a_{21}y^{(11)}(z)k^{10} - 1144066a_{23}y^{(13)}(z)k^{10} - 3268760a_{25}y^{(15)}(z)k^{10} - \\
& 8436285a_{27}y^{(17)}(z)k^{10} - 20030010a_{29}y^{(19)}(z)k^{10} - 44352165a_{31}y^{(21)}(z)k^{10} - 92561040a_{33}y^{(23)}(z)k^{10} - \blacksquare \\
& 183579396a_{35}y^{(25)}(z)k^{10} - 2002a_{14}y^{(5)}(z)k^9 - 11440a_{16}y^{(7)}(z)k^9 - 48620a_{18}y^{(9)}(z)k^9 - 167960a_{20}y^{(11)}(z)k^9 - \blacksquare \\
& 497420a_{22}y^{(13)}(z)k^9 - 1307504a_{24}y^{(15)}(z)k^9 - 3124550a_{26}y^{(17)}(z)k^9 - 6906900a_{28}y^{(19)}(z)k^9 - 14307150a_{30}y^{(21)}(z)k^9 - \\
& 28048800a_{32}y^{(23)}(z)k^9 - 52451256a_{34}y^{(25)}(z)k^9 - 94143280a_{36}y^{(27)}(z)k^9 + 1287a_{13}y^{(5)}(z)k^8 + 6435a_{15}y^{(7)}(z)k^8 + \\
& 24310a_{17}y^{(9)}(z)k^8 + 75582a_{19}y^{(11)}(z)k^8 + 203490a_{21}y^{(13)}(z)k^8 + 490314a_{23}y^{(15)}(z)k^8 + 1081575a_{25}y^{(17)}(z)k^8 + \blacksquare \\
& 2220075a_{27}y^{(19)}(z)k^8 + 4292145a_{29}y^{(21)}(z)k^8 + 7888725a_{31}y^{(23)}(z)k^8 + 13884156a_{33}y^{(25)}(z)k^8 + \\
& 23535820a_{35}y^{(27)}(z)k^8 + 792a_{12}y^{(5)}(z)k^7 + 3432a_{14}y^{(7)}(z)k^7 + 11440a_{16}y^{(9)}(z)k^7 + 31824a_{18}y^{(11)}(z)k^7 + \blacksquare \\
& 77520a_{20}y^{(13)}(z)k^7 + 170544a_{22}y^{(15)}(z)k^7 + 346104a_{24}y^{(17)}(z)k^7 + 657800a_{26}y^{(19)}(z)k^7 + 1184040a_{28}y^{(21)}(z)k^7 + \blacksquare \\
& 2035800a_{30}y^{(23)}(z)k^7 + 3365856a_{32}y^{(25)}(z)k^7 + 5379616a_{34}y^{(27)}(z)k^7 + 8347680a_{36}y^{(29)}(z)k^7 - \\
& 462a_{11}y^{(5)}(z)k^6 - 1716a_{13}y^{(7)}(z)k^6 - 5005a_{15}y^{(9)}(z)k^6 - 12376a_{17}y^{(11)}(z)k^6 - 27132a_{19}y^{(13)}(z)k^6 - \\
& 54264a_{21}y^{(15)}(z)k^6 - 100947a_{23}y^{(17)}(z)k^6 - 177100a_{25}y^{(19)}(z)k^6 - 296010a_{27}y^{(21)}(z)k^6 - 475020a_{29}y^{(23)}(z)k^6 - \blacksquare \\
& 736281a_{31}y^{(25)}(z)k^6 - 1107568a_{33}y^{(27)}(z)k^6 - 1623160a_{35}y^{(29)}(z)k^6 - 252a_{10}y^{(5)}(z)k^5 - 792a_{12}y^{(7)}(z)k^5 - \blacksquare \\
& 2002a_{14}y^{(9)}(z)k^5 - 4368a_{16}y^{(11)}(z)k^5 - 8568a_{18}y^{(13)}(z)k^5 - 15504a_{20}y^{(15)}(z)k^5 - 26334a_{22}y^{(17)}(z)k^5 - \blacksquare \\
& 42504a_{24}y^{(19)}(z)k^5 - 65780a_{26}y^{(21)}(z)k^5 - 98280a_{28}y^{(23)}(z)k^5 - 142506a_{30}y^{(25)}(z)k^5 - 201376a_{32}y^{(27)}(z)k^5 - \blacksquare \\
& 278256a_{34}y^{(29)}(z)k^5 - 376992a_{36}y^{(31)}(z)k^5 + 126a_9y^{(5)}(z)k^4 + 330a_{11}y^{(7)}(z)k^4 + 715a_{13}y^{(9)}(z)k^4 + \\
& 1365a_{15}y^{(11)}(z)k^4 + 2380a_{17}y^{(13)}(z)k^4 + 3876a_{19}y^{(15)}(z)k^4 + 5985a_{21}y^{(17)}(z)k^4 + 8855a_{23}y^{(19)}(z)k^4 + \\
& 12650a_{25}y^{(21)}(z)k^4 + 17550a_{27}y^{(23)}(z)k^4 + 23751a_{29}y^{(25)}(z)k^4 + 31465a_{31}y^{(27)}(z)k^4 + 40920a_{33}y^{(29)}(z)k^4 + \blacksquare \\
& 52360a_{35}y^{(31)}(z)k^4 + 56a_8y^{(5)}(z)k^3 + 120a_{10}y^{(7)}(z)k^3 + 220a_{12}y^{(9)}(z)k^3 + 364a_{14}y^{(11)}(z)k^3 + 560a_{16}y^{(13)}(z)k^3 + \blacksquare \\
& 816a_{18}y^{(15)}(z)k^3 + 1140a_{20}y^{(17)}(z)k^3 + 1540a_{22}y^{(19)}(z)k^3 + 2024a_{24}y^{(21)}(z)k^3 + 2600a_{26}y^{(23)}(z)k^3 + \\
& 3276a_{28}y^{(25)}(z)k^3 + 4060a_{30}y^{(27)}(z)k^3 + 4960a_{32}y^{(29)}(z)k^3 + 5984a_{34}y^{(31)}(z)k^3 + 7140a_{36}y^{(33)}(z)k^3 - \\
& 21a_7y^{(5)}(z)k^2 - 36a_9y^{(7)}(z)k^2 - 55a_{11}y^{(9)}(z)k^2 - 78a_{13}y^{(11)}(z)k^2 - 105a_{15}y^{(13)}(z)k^2 - 136a_{17}y^{(15)}(z)k^2 - \blacksquare \\
& 171a_{19}y^{(17)}(z)k^2 - 210a_{21}y^{(19)}(z)k^2 - 253a_{23}y^{(21)}(z)k^2 - 300a_{25}y^{(23)}(z)k^2 - 351a_{27}y^{(25)}(z)k^2 - \\
& 406a_{29}y^{(27)}(z)k^2 - 465a_{31}y^{(29)}(z)k^2 - 528a_{33}y^{(31)}(z)k^2 - 595a_{35}y^{(33)}(z)k^2 - 6a_6y^{(5)}(z)k - 8a_8y^{(7)}(z)k - \blacksquare
\end{aligned}$$

$$\begin{aligned}
& 10a_{10}y^{(9)}(z)k - 12a_{12}y^{(11)}(z)k - 14a_{14}y^{(13)}(z)k - 16a_{16}y^{(15)}(z)k - 18a_{18}y^{(17)}(z)k - 20a_{20}y^{(19)}(z)k - \\
& 22a_{22}y^{(21)}(z)k - 24a_{24}y^{(23)}(z)k - 26a_{26}y^{(25)}(z)k - 28a_{28}y^{(27)}(z)k - 30a_{30}y^{(29)}(z)k - 32a_{32}y^{(31)}(z)k - \\
& 34a_{34}y^{(33)}(z)k - 36a_{36}y^{(35)}(z)k + (a_1 - C_0 + k(k(4a_4 + k(5a_5 + k(k(8a_8 + k(9a_9 + k(k(12a_{12} + k( \\
& (a_3 + k(k(20a_6 + k(35a_7 + k(k(120a_{10} + k(165a_{11} + k(k(364a_{14} + k(455a_{15} + k(k(816a_{18} + k( \\
& a_5y^{(5)}(z) + a_7y^{(7)}(z) + a_9y^{(9)}(z) + a_{11}y^{(11)}(z) + a_{13}y^{(13)}(z) + a_{15}y^{(15)}(z) + a_{17}y^{(17)}(z) + a_{19}y^{(19)}(z) + \\
& a_{21}y^{(21)}(z) + a_{23}y^{(23)}(z) + a_{25}y^{(25)}(z) + a_{27}y^{(27)}(z) + a_{29}y^{(29)}(z) + a_{31}y^{(31)}(z) + a_{33}y^{(33)}(z) + \\
& a_{35}y^{(35)}(z) = 0
\end{aligned}$$

Real part of equation after substitutions:

$$\begin{aligned}
& 58905a_{36}y^{(4)}(z)k^{32} - 52360a_{35}y^{(4)}(z)k^{31} - 46376a_{34}y^{(4)}(z)k^{30} - 1947792a_{36}y^{(6)}(z)k^{30} + 40920a_{33}y^{(4)}(z)k^{29} + \blacksquare \\
& 1623160a_{35}y^{(6)}(z)k^{29} + 35960a_{32}y^{(4)}(z)k^{28} + 1344904a_{34}y^{(6)}(z)k^{28} + 30260340a_{36}y^{(8)}(z)k^{28} - 31465a_{31}y^{(4)}(z)k^{27} \\
& 1107568a_{33}y^{(6)}(z)k^{27} - 23535820a_{35}y^{(8)}(z)k^{27} - 27405a_{30}y^{(4)}(z)k^{26} - 906192a_{32}y^{(6)}(z)k^{26} - 18156204a_{34}y^{(8)}(z)k^{26} \\
& 254186856a_{36}y^{(10)}(z)k^{26} + 23751a_{29}y^{(4)}(z)k^{25} + 736281a_{31}y^{(6)}(z)k^{25} + 13884156a_{33}y^{(8)}(z)k^{25} + \\
& 183579396a_{35}y^{(10)}(z)k^{25} + 20475a_{28}y^{(4)}(z)k^{24} + 593775a_{30}y^{(6)}(z)k^{24} + 10518300a_{32}y^{(8)}(z)k^{24} + \\
& 131128140a_{34}y^{(10)}(z)k^{24} + 1251677700a_{36}y^{(12)}(z)k^{24} - 17550a_{27}y^{(4)}(z)k^{23} - 475020a_{29}y^{(6)}(z)k^{23} - \\
& 7888725a_{31}y^{(8)}(z)k^{23} - 92561040a_{33}y^{(10)}(z)k^{23} - 834451800a_{35}y^{(12)}(z)k^{23} - 14950a_{26}y^{(4)}(z)k^{22} - \\
& 376740a_{28}y^{(6)}(z)k^{22} - 5852925a_{30}y^{(8)}(z)k^{22} - 64512240a_{32}y^{(10)}(z)k^{22} - 548354040a_{34}y^{(12)}(z)k^{22} - \\
& 3796297200a_{36}y^{(14)}(z)k^{22} + 12650a_{25}y^{(4)}(z)k^{21} + 296010a_{27}y^{(6)}(z)k^{21} + 4292145a_{29}y^{(8)}(z)k^{21} + \\
& 44352165a_{31}y^{(10)}(z)k^{21} + 354817320a_{33}y^{(12)}(z)k^{21} + 2319959400a_{35}y^{(14)}(z)k^{21} + 10626a_{24}y^{(4)}(z)k^{20} + \blacksquare \\
& 230230a_{26}y^{(6)}(z)k^{20} + 3108105a_{28}y^{(8)}(z)k^{20} + 30045015a_{30}y^{(10)}(z)k^{20} + 225792840a_{32}y^{(12)}(z)k^{20} + \\
& 1391975640a_{34}y^{(14)}(z)k^{20} + 7307872110a_{36}y^{(16)}(z)k^{20} - 8855a_{23}y^{(4)}(z)k^{19} - 177100a_{25}y^{(6)}(z)k^{19} - \\
& 2220075a_{27}y^{(8)}(z)k^{19} - 20030010a_{29}y^{(10)}(z)k^{19} - 141120525a_{31}y^{(12)}(z)k^{19} - 818809200a_{33}y^{(14)}(z)k^{19} - \blacksquare \\
& 4059928950a_{35}y^{(16)}(z)k^{19} - 7315a_{22}y^{(4)}(z)k^{18} - 134596a_{24}y^{(6)}(z)k^{18} - 1562275a_{26}y^{(8)}(z)k^{18} - \\
& 13123110a_{28}y^{(10)}(z)k^{18} - 86493225a_{30}y^{(12)}(z)k^{18} - 471435600a_{32}y^{(14)}(z)k^{18} - 2203961430a_{34}y^{(16)}(z)k^{18} - \blacksquare \\
& 9075135300a_{36}y^{(18)}(z)k^{18} + 5985a_{21}y^{(4)}(z)k^{17} + 100947a_{23}y^{(6)}(z)k^{17} + 1081575a_{25}y^{(8)}(z)k^{17} + 8436285a_{27}y^{(10)}(z)k^{17} \\
& 51895935a_{29}y^{(12)}(z)k^{17} + 265182525a_{31}y^{(14)}(z)k^{17} + 1166803110a_{33}y^{(16)}(z)k^{17} + 4537567650a_{35}y^{(18)}(z)k^{17} + \blacksquare \\
& 4845a_{20}y^{(4)}(z)k^{16} + 74613a_{22}y^{(6)}(z)k^{16} + 735471a_{24}y^{(8)}(z)k^{16} + 5311735a_{26}y^{(10)}(z)k^{16} + 30421755a_{28}y^{(12)}(z)k^{16} - \\
& 145422675a_{30}y^{(14)}(z)k^{16} + 601080390a_{32}y^{(16)}(z)k^{16} + 2203961430a_{34}y^{(18)}(z)k^{16} + 7307872110a_{36}y^{(20)}(z)k^{16} - \blacksquare \\
& 3876a_{19}y^{(4)}(z)k^{15} - 54264a_{21}y^{(6)}(z)k^{15} - 490314a_{23}y^{(8)}(z)k^{15} - 3268760a_{25}y^{(10)}(z)k^{15} - 17383860a_{27}y^{(12)}(z)k^{15} - \\
& 77558760a_{29}y^{(14)}(z)k^{15} - 300540195a_{31}y^{(16)}(z)k^{15} - 1037158320a_{33}y^{(18)}(z)k^{15} - 3247943160a_{35}y^{(20)}(z)k^{15} - \blacksquare \\
& 3060a_{18}y^{(4)}(z)k^{14} - 38760a_{20}y^{(6)}(z)k^{14} - 319770a_{22}y^{(8)}(z)k^{14} - 1961256a_{24}y^{(10)}(z)k^{14} - 9657700a_{26}y^{(12)}(z)k^{14} - \\
& 40116600a_{28}y^{(14)}(z)k^{14} - 145422675a_{30}y^{(16)}(z)k^{14} - 471435600a_{32}y^{(18)}(z)k^{14} - 1391975640a_{34}y^{(20)}(z)k^{14} - \blacksquare \\
& 3796297200a_{36}y^{(22)}(z)k^{14} + 2380a_{17}y^{(4)}(z)k^{13} + 27132a_{19}y^{(6)}(z)k^{13} + 203490a_{21}y^{(8)}(z)k^{13} + 1144066a_{23}y^{(10)}(z)k^{13} \\
& 5200300a_{25}y^{(12)}(z)k^{13} + 20058300a_{27}y^{(14)}(z)k^{13} + 67863915a_{29}y^{(16)}(z)k^{13} + 206253075a_{31}y^{(18)}(z)k^{13} + \blacksquare \\
& 573166440a_{33}y^{(20)}(z)k^{13} + 1476337800a_{35}y^{(22)}(z)k^{13} + 1820a_{16}y^{(4)}(z)k^{12} + 18564a_{18}y^{(6)}(z)k^{12} +
\end{aligned}$$

$$\begin{aligned}
& 125970a_{20}y^{(8)}(z)k^{12} + 646646a_{22}y^{(10)}(z)k^{12} + 2704156a_{24}y^{(12)}(z)k^{12} + 9657700a_{26}y^{(14)}(z)k^{12} + \\
& 30421755a_{28}y^{(16)}(z)k^{12} + 86493225a_{30}y^{(18)}(z)k^{12} + 225792840a_{32}y^{(20)}(z)k^{12} + 548354040a_{34}y^{(22)}(z)k^{12} + \blacksquare \\
& 1251677700a_{36}y^{(24)}(z)k^{12} - 1365a_{15}y^{(4)}(z)k^{11} - 12376a_{17}y^{(6)}(z)k^{11} - 75582a_{19}y^{(8)}(z)k^{11} - 352716a_{21}y^{(10)}(z)k^{11} - \blacksquare \\
& 1352078a_{23}y^{(12)}(z)k^{11} - 4457400a_{25}y^{(14)}(z)k^{11} - 13037895a_{27}y^{(16)}(z)k^{11} - 34597290a_{29}y^{(18)}(z)k^{11} - \blacksquare \\
& 84672315a_{31}y^{(20)}(z)k^{11} - 193536720a_{33}y^{(22)}(z)k^{11} - 417225900a_{35}y^{(24)}(z)k^{11} - 1001a_{14}y^{(4)}(z)k^{10} - \\
& 8008a_{16}y^{(6)}(z)k^{10} - 43758a_{18}y^{(8)}(z)k^{10} - 184756a_{20}y^{(10)}(z)k^{10} - 646646a_{22}y^{(12)}(z)k^{10} - 1961256a_{24}y^{(14)}(z)k^{10} - \\
& 5311735a_{26}y^{(16)}(z)k^{10} - 13123110a_{28}y^{(18)}(z)k^{10} - 30045015a_{30}y^{(20)}(z)k^{10} - 64512240a_{32}y^{(22)}(z)k^{10} - \blacksquare \\
& 131128140a_{34}y^{(24)}(z)k^{10} - 254186856a_{36}y^{(26)}(z)k^{10} + 715a_{13}y^{(4)}(z)k^9 + 5005a_{15}y^{(6)}(z)k^9 + 24310a_{17}y^{(8)}(z)k^9 + \blacksquare \\
& 92378a_{19}y^{(10)}(z)k^9 + 293930a_{21}y^{(12)}(z)k^9 + 817190a_{23}y^{(14)}(z)k^9 + 2042975a_{25}y^{(16)}(z)k^9 + 4686825a_{27}y^{(18)}(z)k^9 + \\
& 10015005a_{29}y^{(20)}(z)k^9 + 20160075a_{31}y^{(22)}(z)k^9 + 38567100a_{33}y^{(24)}(z)k^9 + 70607460a_{35}y^{(26)}(z)k^9 + \\
& 495a_{12}y^{(4)}(z)k^8 + 3003a_{14}y^{(6)}(z)k^8 + 12870a_{16}y^{(8)}(z)k^8 + 43758a_{18}y^{(10)}(z)k^8 + 125970a_{20}y^{(12)}(z)k^8 + \blacksquare \\
& 319770a_{22}y^{(14)}(z)k^8 + 735471a_{24}y^{(16)}(z)k^8 + 1562275a_{26}y^{(18)}(z)k^8 + 3108105a_{28}y^{(20)}(z)k^8 + 5852925a_{30}y^{(22)}(z)k^8 + \\
& 10518300a_{32}y^{(24)}(z)k^8 + 18156204a_{34}y^{(26)}(z)k^8 + 30260340a_{36}y^{(28)}(z)k^8 - 330a_{11}y^{(4)}(z)k^7 - 1716a_{13}y^{(6)}(z)k^7 - \blacksquare \\
& 6435a_{15}y^{(8)}(z)k^7 - 19448a_{17}y^{(10)}(z)k^7 - 50388a_{19}y^{(12)}(z)k^7 - 116280a_{21}y^{(14)}(z)k^7 - 245157a_{23}y^{(16)}(z)k^7 - \blacksquare \\
& 480700a_{25}y^{(18)}(z)k^7 - 888030a_{27}y^{(20)}(z)k^7 - 1560780a_{29}y^{(22)}(z)k^7 - 2629575a_{31}y^{(24)}(z)k^7 - 4272048a_{33}y^{(26)}(z)k^7 - \\
& 6724520a_{35}y^{(28)}(z)k^7 - 210a_{10}y^{(4)}(z)k^6 - 924a_{12}y^{(6)}(z)k^6 - 3003a_{14}y^{(8)}(z)k^6 - 8008a_{16}y^{(10)}(z)k^6 - \\
& 18564a_{18}y^{(12)}(z)k^6 - 38760a_{20}y^{(14)}(z)k^6 - 74613a_{22}y^{(16)}(z)k^6 - 134596a_{24}y^{(18)}(z)k^6 - 230230a_{26}y^{(20)}(z)k^6 - \blacksquare \\
& 376740a_{28}y^{(22)}(z)k^6 - 593775a_{30}y^{(24)}(z)k^6 - 906192a_{32}y^{(26)}(z)k^6 - 1344904a_{34}y^{(28)}(z)k^6 - 1947792a_{36}y^{(30)}(z)k^6 - \\
& 126a_9y^{(4)}(z)k^5 + 462a_{11}y^{(6)}(z)k^5 + 1287a_{13}y^{(8)}(z)k^5 + 3003a_{15}y^{(10)}(z)k^5 + 6188a_{17}y^{(12)}(z)k^5 + \\
& 11628a_{19}y^{(14)}(z)k^5 + 20349a_{21}y^{(16)}(z)k^5 + 33649a_{23}y^{(18)}(z)k^5 + 53130a_{25}y^{(20)}(z)k^5 + 80730a_{27}y^{(22)}(z)k^5 + \blacksquare \\
& 118755a_{29}y^{(24)}(z)k^5 + 169911a_{31}y^{(26)}(z)k^5 + 237336a_{33}y^{(28)}(z)k^5 + 324632a_{35}y^{(30)}(z)k^5 + 70a_8y^{(4)}(z)k^4 + \blacksquare \\
& 210a_{10}y^{(6)}(z)k^4 + 495a_{12}y^{(8)}(z)k^4 + 1001a_{14}y^{(10)}(z)k^4 + 1820a_{16}y^{(12)}(z)k^4 + 3060a_{18}y^{(14)}(z)k^4 + \\
& 4845a_{20}y^{(16)}(z)k^4 + 7315a_{22}y^{(18)}(z)k^4 + 10626a_{24}y^{(20)}(z)k^4 + 14950a_{26}y^{(22)}(z)k^4 + 20475a_{28}y^{(24)}(z)k^4 + \blacksquare \\
& 27405a_{30}y^{(26)}(z)k^4 + 35960a_{32}y^{(28)}(z)k^4 + 46376a_{34}y^{(30)}(z)k^4 + 58905a_{36}y^{(32)}(z)k^4 - 35a_7y^{(4)}(z)k^3 - \\
& 84a_9y^{(6)}(z)k^3 - 165a_{11}y^{(8)}(z)k^3 - 286a_{13}y^{(10)}(z)k^3 - 455a_{15}y^{(12)}(z)k^3 - 680a_{17}y^{(14)}(z)k^3 - 969a_{19}y^{(16)}(z)k^3 - \blacksquare \\
& 1330a_{21}y^{(18)}(z)k^3 - 1771a_{23}y^{(20)}(z)k^3 - 2300a_{25}y^{(22)}(z)k^3 - 2925a_{27}y^{(24)}(z)k^3 - 3654a_{29}y^{(26)}(z)k^3 - \\
& 4495a_{31}y^{(28)}(z)k^3 - 5456a_{33}y^{(30)}(z)k^3 - 6545a_{35}y^{(32)}(z)k^3 - 15a_6y^{(4)}(z)k^2 - 28a_8y^{(6)}(z)k^2 - 45a_{10}y^{(8)}(z)k^2 - \blacksquare \\
& 66a_{12}y^{(10)}(z)k^2 - 91a_{14}y^{(12)}(z)k^2 - 120a_{16}y^{(14)}(z)k^2 - 153a_{18}y^{(16)}(z)k^2 - 190a_{20}y^{(18)}(z)k^2 - 231a_{22}y^{(20)}(z)k^2 - \blacksquare \\
& 276a_{24}y^{(22)}(z)k^2 - 325a_{26}y^{(24)}(z)k^2 - 378a_{28}y^{(26)}(z)k^2 - 435a_{30}y^{(28)}(z)k^2 - 496a_{32}y^{(30)}(z)k^2 - \\
& 561a_{34}y^{(32)}(z)k^2 - 630a_{36}y^{(34)}(z)k^2 + 5a_5y^{(4)}(z)k + 7a_7y^{(6)}(z)k + 9a_9y^{(8)}(z)k + 11a_{11}y^{(10)}(z)k + \\
& 13a_{13}y^{(12)}(z)k + 15a_{15}y^{(14)}(z)k + 17a_{17}y^{(16)}(z)k + 19a_{19}y^{(18)}(z)k + 21a_{21}y^{(20)}(z)k + 23a_{23}y^{(22)}(z)k + \\
& 25a_{25}y^{(24)}(z)k + 27a_{27}y^{(26)}(z)k + 29a_{29}y^{(28)}(z)k + 31a_{31}y^{(30)}(z)k + 33a_{33}y^{(32)}(z)k + 35a_{35}y^{(34)}(z)k - \\
& by(z)^3 + (a_{36}k^{36} - a_{35}k^{35} - a_{34}k^{34} + a_{33}k^{33} + a_{32}k^{32} - a_{31}k^{31} - a_{30}k^{30} + a_{29}k^{29} + a_{28}k^{28} - a_{27}k^{27} - a_{26}k^{26} + \\
& (a_2 + k(3a_3 + k(k(15a_6 + k(21a_7 + k(k(k(45a_{10} + k(55a_{11} + k(k(k(91a_{14} + k(105a_{15} + k(k(k(153a_{16} + k(167a_{17} + k(k(k(201a_{20} + k(227a_{21} + k(k(k(276a_{24} + k(306a_{25} + k(k(k(391a_{28} + k(435a_{29} + k(k(k(589a_{32} + k(654a_{33} + k(k(k(906a_{36} + k(k(k(k(125970a_{40} + k(14950a_{41} + k(k(k(k(20160075a_{44} + k(237336a_{45} + k(k(k(k(k(324632a_{48} + k(k(k(k(k(46376a_{51} + k(k(k(k(k(k(53130a_{54} + k(k(k(k(k(k(k(58905a_{57} + k(k(k(k(k(k(k(6545a_{60} + k(k(k(k(k(k(k(84a_{63} + k(k(k(k(k(k(k(10626a_{66} + k(k(k(k(k(k(k(125970a_{69} + k(k(k(k(k(k(k(1562275a_{72} + k(k(k(k(k(k(k(18564a_{75} + k(k(k(k(k(k(k(230230a_{78} + k(k(k(k(k(k(k(2629575a_{81} + k(k(k(k(k(k(k(2925a_{84} + k(k(k(k(k(k(k(324632a_{87} + k(k(k(k(k(k(k(35960a_{90} + k(k(k(k(k(k(k(38567100a_{93} + k(k(k(k(k(k(k(435a_{96} + k(k(k(k(k(k(k(46376a_{99} + k(k(k(k(k(k(k(495a_{102} + k(k(k(k(k(k(k(53130a_{105} + k(k(k(k(k(k(k(58905a_{108} + k(k(k(k(k(k(k(6545a_{111} + k(k(k(k(k(k(k(84a_{114} + k(k(k(k(k(k(k(10626a_{117} + k(k(k(k(k(k(k(125970a_{120} + k(k(k(k(k(k(k(1562275a_{123} + k(k(k(k(k(k(k(18564a_{126} + k(k(k(k(k(k(k(230230a_{129} + k(k(k(k(k(k(k(2629575a_{132} + k(k(k(k(k(k(k(2925a_{135} + k(k(k(k(k(k(k(324632a_{138} + k(k(k(k(k(k(k(35960a_{141} + k(k(k(k(k(k(k(38567100a_{144} + k(k(k(k(k(k(k(435a_{147} + k(k(k(k(k(k(k(46376a_{150} + k(k(k(k(k(k(k(495a_{153} + k(k(k(k(k(k(k(53130a_{156} + k(k(k(k(k(k(k(58905a_{159} + k(k(k(k(k(k(k(6545a_{162} + k(k(k(k(k(k(k(84a_{165} + k(k(k(k(k(k(k(10626a_{168} + k(k(k(k(k(k(k(125970a_{171} + k(k(k(k(k(k(k(1562275a_{174} + k(k(k(k(k(k(k(18564a_{177} + k(k(k(k(k(k(k(230230a_{180} + k(k(k(k(k(k(k(2629575a_{183} + k(k(k(k(k(k(k(2925a_{186} + k(k(k(k(k(k(k(324632a_{189} + k(k(k(k(k(k(k(35960a_{192} + k(k(k(k(k(k(k(38567100a_{195} + k(k(k(k(k(k(k(435a_{198} + k(k(k(k(k(k(k(46376a_{201} + k(k(k(k(k(k(k(495a_{204} + k(k(k(k(k(k(k(53130a_{207} + k(k(k(k(k(k(k(58905a_{210} + k(k(k(k(k(k(k(6545a_{213} + k(k(k(k(k(k(k(84a_{216} + k(k(k(k(k(k(k(10626a_{219} + k(k(k(k(k(k(k(125970a_{222} + k(k(k(k(k(k(k(1562275a_{225} + k(k(k(k(k(k(k(18564a_{228} + k(k(k(k(k(k(k(230230a_{231} + k(k(k(k(k(k(k(2629575a_{234} + k(k(k(k(k(k(k(2925a_{237} + k(k(k(k(k(k(k(324632a_{240} + k(k(k(k(k(k(k(35960a_{243} + k(k(k(k(k(k(k(38567100a_{246} + k(k(k(k(k(k(k(435a_{249} + k(k(k(k(k(k(k(46376a_{252} + k(k(k(k(k(k(k(495a_{255} + k(k(k(k(k(k(k(53130a_{258} + k(k(k(k(k(k(k(58905a_{261} + k(k(k(k(k(k(k(6545a_{264} + k(k(k(k(k(k(k(84a_{267} + k(k(k(k(k(k(k(10626a_{270} + k(k(k(k(k(k(k(125970a_{273} + k(k(k(k(k(k(k(1562275a_{276} + k(k(k(k(k(k(k(18564a_{279} + k(k(k(k(k(k(k(230230a_{282} + k(k(k(k(k(k(k(2629575a_{285} + k(k(k(k(k(k(k(2925a_{288} + k(k(k(k(k(k(k(324632a_{291} + k(k(k(k(k(k(k(35960a_{294} + k(k(k(k(k(k(k(38567100a_{297} + k(k(k(k(k(k(k(435a_{300} + k(k(k(k(k(k(k(46376a_{303} + k(k(k(k(k(k(k(495a_{306} + k(k(k(k(k(k(k(53130a_{309} + k(k(k(k(k(k(k(58905a_{312} + k(k(k(k(k(k(k(6545a_{315} + k(k(k(k(k(k(k(84a_{318} + k(k(k(k(k(k(k(10626a_{321} + k(k(k(k(k(k(k(125970a_{324} + k(k(k(k(k(k(k(1562275a_{327} + k(k(k(k(k(k(k(18564a_{330} + k(k(k(k(k(k(k(230230a_{333} + k(k(k(k(k(k(k(2629575a_{336} + k(k(k(k(k(k(k(2925a_{339} + k(k(k(k(k(k(k(324632a_{342} + k(k(k(k(k(k(k(35960a_{345} + k(k(k(k(k(k(k(38567100a_{348} + k(k(k(k(k(k(k(435a_{351} + k(k(k(k(k(k(k(46376a_{354} + k(k(k(k(k(k(k(495a_{357} + k(k(k(k(k(k(k(53130a_{360} + k(k(k(k(k(k(k(58905a_{363} + k(k(k(k(k(k(k(6545a_{366} + k(k(k(k(k(k(k(84a_{369} + k(k(k(k(k(k(k(10626a_{372} + k(k(k(k(k(k(k(125970a_{375} + k(k(k(k(k(k(k(1562275a_{378} + k(k(k(k(k(k(k(18564a_{381} + k(k(k(k(k(k(k(230230a_{384} + k(k(k(k(k(k(k(2629575a_{387} + k(k(k(k(k(k(k(2925a_{390} + k(k(k(k(k(k(k(324632a_{393} + k(k(k(k(k(k(k(35960a_{396} + k(k(k(k(k(k(k(38567100a_{399} + k(k(k(k(k(k(k(435a_{402} + k(k(k(k(k(k(k(46376a_{405} + k(k(k(k(k(k(k(495a_{408} + k(k(k(k(k(k(k(53130a_{411} + k(k(k(k(k(k(k(58905a_{414} + k(k(k(k(k(k(k(6545a_{417} + k(k(k(k(k(k(k(84a_{420} + k(k(k(k(k(k(k(10626a_{423} + k(k(k(k(k(k(k(125970a_{426} + k(k(k(k(k(k(k(1562275a_{429} + k(k(k(k(k(k(k(18564a_{432} + k(k(k(k(k(k(k(230230a_{435} + k(k(k(k(k(k(k(2629575a_{438} + k(k(k(k(k(k(k(2925a_{441} + k(k(k(k(k(k(k(324632a_{444} + k(k(k(k(k(k(k(35960a_{447} + k(k(k(k(k(k(k(38567100a_{450} + k(k(k(k(k(k(k(435a_{453} + k(k(k(k(k(k(k(46376a_{456} + k(k(k(k(k(k(k(495a_{459} + k(k(k(k(k(k(k(53130a_{462} + k(k(k(k(k(k(k(58905a_{465} + k(k(k(k(k(k(k(6545a_{468} + k(k(k(k(k(k(k(84a_{471} + k(k(k(k(k(k(k(10626a_{474} + k(k(k(k(k(k(k(125970a_{477} + k(k(k(k(k(k(k(1562275a_{480} + k(k(k(k(k(k(k(18564a_{483} + k(k(k(k(k(k(k(230230a_{486} + k(k(k(k(k(k(k(2629575a_{489} + k(k(k(k(k(k(k(2925a_{492} + k(k(k(k(k(k(k(324632a_{495} + k(k(k(k(k(k(k(35960a_{498} + k(k(k(k(k(k(k(38567100a_{501} + k(k(k(k(k(k(k(435a_{504} + k(k(k(k(k(k(k(46376a_{507} + k(k(k(k(k(k(k(495a_{510} + k(k(k(k(k(k(k(53130a_{513} + k(k(k(k(k(k(k(58905a_{516} + k(k(k(k(k(k(k(6545a_{519} + k(k(k(k(k(k(k(84a_{522} + k(k(k(k(k(k(k(10626a_{525} + k(k(k(k(k(k(k(125970a_{528} + k(k(k(k(k(k(k(1562275a_{531} + k(k(k(k(k(k(k(18564a_{534} + k(k(k(k(k(k(k(230230a_{537} + k(k(k(k(k(k(k(2629575a_{540} + k(k(k(k(k(k(k(2925a_{543} + k(k(k(k(k(k(k(324632a_{546} + k(k(k(k(k(k(k(35960a_{549} + k(k(k(k(k(k(k(38567100a_{552} + k(k(k(k(k(k(k(435a_{555} + k(k(k(k(k(k(k(46376a_{558} + k(k(k(k(k(k(k(495a_{561} + k(k(k(k(k(k(k(53130a_{564} + k(k(k(k(k(k(k(58905a_{567} + k(k(k(k(k(k(k(6545a_{570} + k(k(k(k(k(k(k(84a_{573} + k(k(k(k(k(k(k(10626a_{576} + k(k(k(k(k(k(k(125970a_{579} + k(k(k(k(k(k(k(1562275a_{582} + k(k(k(k(k(k(k(18564a_{585} + k(k(k(k(k(k(k(230230a_{588} + k(k(k(k(k(k(k(2629575a_{591} + k(k(k(k(k(k(k(2925a_{594} + k(k(k(k(k(k(k(324632a_{597} + k(k(k(k(k(k(k(35960a_{600} + k(k(k(k(k(k(k(38567100a_{603} + k(k(k(k(k(k(k(435a_{606} + k(k(k(k(k(k(k(46376a_{609} + k(k(k(k(k(k(k(495a_{612} + k(k(k(k(k(k(k(53130a_{615} + k(k(k(k(k(k(k(58905a_{618} + k(k(k(k(k(k(k(6545a_{621} + k(k(k(k(k(k(k(84a_{624} + k(k(k(k(k(k(k(10626a_{627} + k(k(k(k(k(k(k(125970a_{630} + k(k(k(k(k(k(k(1562275a_{633} + k(k(k(k(k(k(k(18564a_{636} + k(k(k(k(k(k(k(230230a_{640} + k(k(k(k(k(k(k(2629575a_{643} + k(k(k(k(k(k(k(2925a_{646} + k(k(k(k(k(k(k(324632a_{649} + k(k(k(k(k(k(k(35960a_{652} + k(k(k(k(k(k(k(38567100a_{655} + k(k(k(k(k(k(k(435a_{658} + k(k(k(k(k(k(k(46376a_{661} + k(k(k(k(k(k(k(495a_{664} + k(k(k(k(k(k(k(53130a_{667} + k(k(k(k(k(k(k(58905a_{670} + k(k(k(k(k(k(k(6545a_{673} + k(k(k(k(k(k(k(84a_{676} + k(k(k(k(k(k(k(10626a_{679} + k(k(k(k(k(k(k(125970a_{682} + k(k(k(k(k(k(k(1562275a_{685} + k(k(k(k(k(k(k(18564a_{688} + k(k(k(k(k(k(k(230230a_{691} + k(k(k(k(k(k(k(2629575a_{694} + k(k(k(k(k(k(k(2925a_{697} + k(k(k(k(k(k(k(324632a_{700} + k(k(k(k(k(k(k(35960a_{703} + k(k(k(k(k(k(k(38567100a_{706} + k(k(k(k(k(k(k(435a_{712} + k(k(k(k(k(k(k(46376a_{715} + k(k(k(k(k(k(k(495a_{718} + k(k(k(k(k(k(k(53130a_{721} + k(k(k(k(k(k(k(58905a_{724} + k(k(k(k(k(k(k(6545a_{727} + k(k(k(k(k(k(k(84a_{730} + k(k(k(k(k(k(k(10626a_{733} + k(k(k(k(k(k(k(125970a_{736} + k(k(k(k(k(k(k(1562275a_{739} + k(k(k(k(k(k(k(18564a_{742} + k(k(k(k(k(k(k(230230a_{745} + k(k(k(k(k(k(k(2629575a_{748} + k(k(k(k(k(k(k(2925a_{751} + k(k(k(k(k(k(k(324632a_{754} + k(k(k(k(k(k(k(35960a_{757} + k(k(k(k(k(k(k(38567100a_{760} + k(k(k(k(k(k(k(435a_{762} + k(k(k(k(k(k(k(46376a_{765} + k(k(k(k(k(k(k(495a_{768} + k(k(k(k(k(k(k(53130a_{771} + k(k(k(k(k(k(k(58905a_{774} + k(k(k(k(k(k(k(6545a_{777} + k(k(k(k(k(k(k(84a_{780} + k(k(k(k(k(k(k(10626a_{783} + k(k(k(k(k(k(k(125970a_{786} + k(k(k(k(k(k(k(1562275a_{789} + k(k(k(k(k(k(k(18564a_{792} + k(k(k(k(k(k(k(230230a_{795} + k(k(k(k(k(k(k(2629575a_{798} + k(k(k(k(k(k(k(2925a_{801} + k(k(k(k(k(k(k(324632a_{804} + k(k(k(k(k(k(k(35960a_{807} + k(k(k(k(k(k(k(38567100a_{810} + k(k(k(k(k(k(k(435a_{812} + k(k(k(k(k(k(k(46376a_{815} + k(k(k(k(k(k(k(495a_{818} + k(k(k(k(k(k(k(53130a_{821} + k(k(k(k(k(k(k(58905a_{824} + k(k(k(k(k(k(k(6545a_{827} + k(k(k(k(k(k(k(84a_{830} + k(k(k(k(k(k(k(10626a_{833} + k(k(k(k(k(k(k(125970a_{836} + k(k(k(k(k(k(k(1562275a_{839} + k(k(k(k(k(k(k(18564a_{842} + k(k(k(k(k(k(k(230230a_{845} + k(k(k(k(k(k(k(2629575a_{848} + k(k(k(k(k(k(k(2925a_{851} + k(k(k(k(k(k(k(324632a_{854} + k(k(k(k(k(k(k(35960a_{857} + k(k(k(k(k(k(k(38567100a_{860} + k(k(k(k(k(k(k(435a_{862} + k(k(k(k(k(k(k(46376a_{865} + k(k(k(k(k(k(k(495a_{868} + k(k(k(k(k(k(k(53130a_{871} + k(k(k(k(k(k(k(58905a_{874} + k(k(k(k(k(k(k(6545a_{877} + k(k(k(k(k(k(k(84a_{880} + k(k(k(k(k(k(k(10626a_{883} + k(k(k(k(k(k(k(125970a_{886} + k(k(k(k(k(k(k(1562275a_{889} + k(k(k(k(k(k(k(18564a_{892} + k(k(k(k(k(k(k(230230a_{895} + k(k(k(k(k(k(k(2629575a_{898} + k(k(k(k(k(k(k(2925a_{901} + k(k(k(k(k(k(k(324632a_{904} + k(k(k(k(k(k(k(35960a_{907} + k(k(k(k(k(k(k(38567100a_{910} + k(k(k(k(k(k(k(435a_{912} + k(k(k(k(k(k(k(46376a_{915} + k(k(k(k(k(k(k(495a_{918} + k(k(k(k(k(k(k(53130a_{921} + k(k(k(k(k(k(k(58905a_{924} + k(k(k(k(k(k(k(6545a_{927} + k(k(k(k(k(k(k(84a_{930} + k(k(k(k(k(k(k(10626a_{933} + k(k(k(k(k(k(k(125970a_{936} + k(k(k(k(k(k(k(1562275a_{939} + k(k(k(k(k(k(k(18564a_{942} + k(k(k(k(k(k(k(230230a_{945} + k(k(k(k(k(k(k(2629575a_{948} + k(k(k(k(k(k(k(2925a_{951} + k(k(k(k(k(k(k(324632a_{954} + k(k(k(k(k(k(k(35960a_{957} + k(k(k(k(k(k(k(38567100a_{960} + k(k(k(k(k(k(k(435a_{962} + k(k(k(k(k(k(k(46376a_{965} + k(k(k(k(k(k(k(495a_{968} + k(k(k(k(k(k(k(53130a_{971} + k(k(k(k(k(k(k(58905a_{974} + k(k(k(k(k(k(k(6545a_{977} + k(k(k(k(k(k(k(84a_{980} + k(k(k(k(k(k(k(10626a_{983} + k(k(k(k(k(k(k(125970a_{986} + k(k(k(k(k(k(k(1562275a_{989} + k(k(k(k(k(k(k(18564a_{992} + k(k(k(k(k(k(k(230230a_{995} + k(k(k(k(k(k(k(2629575a_{998} + k(k(k(k(k(k(k(2925a_{1001} + k(k(k(k(k(k(k(324632a_{1004} + k(k(k(k(k(k(k(35960a_{1007} + k(k(k(k(k(k(k(38567100a_{1010} + k(k(k(k(k(k(k(435a_{1012} + k(k(k(k(k(k(k(46376a_{1015} + k(k(k(k(k(k(k(495a_{1018} + k(k(k(k(k(k(k(53130a_{1021} + k(k(k(k(k(k(k(58905a_{1024} + k(k(k(k(k(k(k(6545a_{1027} + k(k(k(k(k(k(k(84a_{1030} + k(k(k(k(k(k(k(10626a_{1033} + k(k(k(k(k(k(k(125970a_{1036} + k(k(k(k(k(k(k(1562275a_{1039} + k(k(k(k(k(k(k(18564a_{1042} + k(k(k(k(k(k(k(230230a_{1045} + k(k(k(k(k(k(k(2629575a_{1048} + k(k(k(k(k(k(k(2925a_{1051} + k(k(k(k(k(k(k(324632a_{1054} + k(k(k(k(k(k(k(35960a_{1057} + k(k(k(k(k(k(k(38567100a_{1060} + k(k(k(k(k(k(k(435a_{1062} + k(k(k(k(k(k(k(46376a_{1065} + k(k(k(k(k(k(k(495a_{1068} + k(k(k(k(k(k(k(53130a_{1071} + k(k(k(k(k(k(k(58905a_{1074} + k(k(k(k(k(k(k(6545a_{1077} + k(k(k(k(k(k(k(84a_{1080} + k(k(k(k(k(k(k(10626a_{1083} + k(k(k(k(k(k(k(125970a_{1086} + k(k(k(k(k(k(k(1562275a_{1089} + k(k(k(k(k(k(k(18564a_{1092} + k(k(k(k(k(k(k(230230a_{1095} + k(k(k(k(k(k(k(2629575a_{1098} + k(k(k(k(k(k(k(2925a_{1101} + k(k(k(k(k(k(k(324632a_{1104} + k(k(k(k(k(k(k(35960a_{1107} + k(k(k(k(k(k(k(38567100a_{1110} + k(k(k(k(k(k(k(435a_{1112} + k(k(k(k(k(k(k(46376a_{1115} + k(k(k(k(k(k(k(495a_{1118} + k(k(k(k(k(k(k(53130a_{1121} + k(k(k(k(k(k(k(58905a_{1124} + k(k(k(k(k(k(k(6545a_{1127} + k(k(k(k(k(k(k(84a_{1130} + k(k(k(k(k(k(k(10626a_{1133} + k(k(k(k(k(k(k(125970a_{1136} + k(k(k(k(k(k(k(1562275a_{1139} + k(k(k(k(k(k(k(18564a_{1142} + k(k(k(k(k(k(k(230230a_{1145} + k(k(k(k(k(k(k(2629575a_{1148} + k(k(k(k(k(k(k(2925a_{1151} + k(k(k(k(k(k(k(324632a_{1154} + k(k(k(k(k(k(k(35960a_{1157} + k(k(k(k(k(k(k(38567100a_{1160} + k(k(k(k(k(k(k(435a_{1162} + k(k(k(k(k(k(k(46376a_{1165} + k(k(k(k(k(k(k(495a_{1168} + k(k(k(k(k(k(k(53130a_{1171} + k(k(k(k(k(k(k(58905a_{1174} + k(k(k(k(k(k(k(6545a_{1177} + k(k(k(k(k(k(k(84a_{1180} + k(k(k(k(k(k(k(10626a_{1183} + k(k(k(k(k(k(k(125970a_{1186} + k(k(k(k(k(k(k(1562275a_{1189} + k(k(k(k(k(k(k(18564a_{1192} + k(k(k(k(k(k(k(230230a_{1195} + k(k(k(k(k(k(k(2629575a_{1198} + k(k(k(k(k(k(k(2925a_{1201} + k(k(k(k(k(k(k(324632a_{1204} + k(k(k(k(k(k(k(35960a_{1207} + k(k(k(k(k(k(k(38567100a_{1210} + k(k(k(k(k(k(k(435a_{1212} + k(k(k(k(k(k(k(46376a_{1215} + k(k(k(k(k(k(k(495a_{1218} + k(k(k(k(k(k(k(53130a$$

$$a_4y^{(4)}(z) + a_6y^{(6)}(z) + a_8y^{(8)}(z) + a_{10}y^{(10)}(z) + a_{12}y^{(12)}(z) + a_{14}y^{(14)}(z) + a_{16}y^{(16)}(z) + a_{18}y^{(18)}(z) + a_{20}y^{(20)}(z) + a_{22}y^{(22)}(z) + a_{24}y^{(24)}(z) + a_{26}y^{(26)}(z) + a_{28}y^{(28)}(z) + a_{30}y^{(30)}(z) + a_{32}y^{(32)}(z) + a_{34}y^{(34)}(z) + a_{36}y^{(36)}(z) = 0$$

Constraints on coefficients from imaginary part of equation:

$$a_{35} \rightarrow 36a_{36}k$$

$$a_{33} \rightarrow 34a_{34}k + 14280a_{36}k^3$$

$$a_{31} \rightarrow 32a_{32}k + 11968a_{34}k^3 + 6031872a_{36}k^5$$

$$a_{29} \rightarrow 30a_{30}k + 9920a_{32}k^3 + 4452096a_{34}k^5 + 2270568960a_{36}k^7$$

$$a_{27} \rightarrow 28a_{28}k + 8120a_{30}k^3 + 3222016a_{32}k^5 + 1463255552a_{34}k^7 + 747121070080a_{36}k^9$$

$$a_{25} \rightarrow 26a_{26}k + 6552a_{28}k^3 + 2280096a_{30}k^5 + 915512832a_{32}k^7 + 416253167616a_{34}k^9 + 212560107282432a_{36}k^{11} + \blacksquare$$

$$a_{23} \rightarrow 24a_{24}k + 5200a_{26}k^3 + 1572480a_{28}k^5 + 553737600a_{30}k^7 + 222595276800a_{32}k^9 + 101219098705920a_{34}k^{11} + \blacksquare$$

$$5168833334937600a_{36}k^{13}$$

$$a_{21} \rightarrow 22a_{22}k + 4048a_{24}k^3 + 1052480a_{26}k^5 + 322058880a_{28}k^7 + 113541542400a_{30}k^9 + 45647828828160a_{32}k^{11} + \blacksquare$$

$$20757378307522560a_{34}k^{13} + 10599935211103518720a_{36}k^{15}$$

$$a_{19} \rightarrow 20a_{20}k + 3080a_{22}k^3 + 680064a_{24}k^5 + 178921600a_{26}k^7 + 54813158400a_{28}k^9 + 19326701721600a_{30}k^{11} + \blacksquare$$

$$7770141612441600a_{32}k^{13} + 3533311737034506240a_{34}k^{15} + 1804316572693993881600a_{36}k^{17}$$

$$a_{17} \rightarrow 18a_{18}k + 2280a_{20}k^3 + 421344a_{22}k^5 + 94140288a_{24}k^7 + 24796428800a_{26}k^9 + 7597393090560a_{28}k^{11} + \blacksquare$$

$$2678818983321600a_{30}k^{13} + 1076998764764528640a_{32}k^{15} + 489743069731226910720a_{34}k^{17} + 2500915908553637$$

$$a_{15} \rightarrow 16a_{16}k + 1632a_{18}k^3 + 248064a_{20}k^5 + 46387968a_{22}k^7 + 10376351744a_{24}k^9 + 2733453598720a_{26}k^{11} + \blacksquare$$

$$837515820072960a_{28}k^{13} + 295306112919306240a_{30}k^{15} + 118725592662115614720a_{32}k^{17} + 539880259624277272$$

$$27569458685824670116085760a_{36}k^{21}$$

$$a_{13} \rightarrow 14a_{14}k + 1120a_{16}k^3 + 137088a_{18}k^5 + 21085440a_{20}k^7 + 3947525120a_{22}k^9 + 883115778048a_{24}k^{11} + \blacksquare$$

$$232643283353600a_{26}k^{13} + 71280785877073920a_{28}k^{15} + 25133441995004313600a_{30}k^{17} + 10104710741630858035$$

$$4594909780970778352680960a_{34}k^{21} + 2346430956531614743737139200a_{36}k^{23}$$

$$a_{11} \rightarrow 12a_{12}k + 728a_{14}k^3 + 69888a_{16}k^5 + 8656128a_{18}k^7 + 1332930560a_{20}k^9 + 249576198144a_{22}k^{11} +$$

$$55834388004864a_{24}k^{13} + 14708733593681920a_{26}k^{15} + 4506686150828359680a_{28}k^{17} + 1589047253724207513600$$

$$638864461525348861870080a_{32}k^{21} + 290510499380104682557931520a_{34}k^{23} + 1483517329944360438979740303$$

$$a_9 \rightarrow 10a_{10}k + 440a_{12}k^3 + 32032a_{14}k^5 + 3111680a_{16}k^7 + 385848320a_{18}k^9 + 59422904320a_{20}k^{11} +$$

$$11126417899520a_{22}k^{13} + 2489170300469248a_{24}k^{15} + 655734757395660800a_{26}k^{17} + 200914020585819340800a_{28}$$

$$70841825370754410086400a_{30}k^{21} + 28481421507853400250777600a_{32}k^{23} + 129513417693555276418866216960$$

$$6613716200248545320032702300160a_{36}k^{27}$$

$$a_7 \rightarrow 240a_{10}k^3 + 12672a_{12}k^5 + 933504a_{14}k^7 + 90787840a_{16}k^9 + 11259076608a_{18}k^{11} + 1733987205120a_{20}k^{13} + \blacksquare$$

$$324674387017728a_{22}k^{15} + 72635234665365504a_{24}k^{17} + 19134668627220889600a_{26}k^{19} + 58627717548210546278$$

$$2067199948150650018201600a_{30}k^{23} + 831102145627092682901815296a_{32}k^{25} + 377926640014202589716154417$$

$$\begin{aligned}
& 192991551460894423709311806996480a_{36}k^{29} + 8a_8k \\
& a_5 \rightarrow 4032a_{10}k^5 + 215424a_{12}k^7 + 15887872a_{14}k^9 + 1545363456a_{16}k^{11} + 191651217408a_{18}k^{13} + \\
& 29515853365248a_{20}k^{15} + 5526593941929984a_{22}k^{17} + 1236393972835811328a_{24}k^{19} + 325709541934503034880a_{26}k^{21} + \\
& 99795859565893449154560a_{28}k^{23} + 35187792455985778913181696a_{30}k^{25} + 141469865245958188663801118720a_{32}k^{27} + \\
& 6433051715363147456977060233216a_{34}k^{29} + 3285094247734131823302026528292864a_{36}k^{31} + 6a_6k + \blacksquare \\
& 112a_8k^3 \\
& a_3 \rightarrow 32640a_{10}k^7 + 1745920a_{12}k^9 + 128780288a_{14}k^{11} + 12526223360a_{16}k^{13} + 1553465966592a_{18}k^{15} + \blacksquare \\
& 239246490992640a_{20}k^{17} + 44796883073761280a_{22}k^{19} + 10021832059523170304a_{24}k^{21} + 264010210491781611520a_{26}k^{23} + \\
& 808914769103121354326016a_{28}k^{25} + 285221502512012477144760320a_{30}k^{27} + 11467115357153560529370873856a_{32}k^{29} + \\
& 52144353138637013068286135369728a_{34}k^{31} + 26627971004564581137636218728611840a_{36}k^{33} + \\
& 4a_4k + 40a_6k^3 + 896a_8k^5 \\
& C0 \rightarrow a_1 - 79360a_{10}k^9 - 4245504a_{12}k^{11} - 313155584a_{14}k^{13} - 30460116992a_{16}k^{15} - 3777576173568a_{18}k^{17} - \blacksquare \\
& 2a_2k - 581777702256640a_{20}k^{19} - 108932957168730112a_{22}k^{21} - 24370173276164456448a_{24}k^{23} - \\
& 6419958484945407574016a_{26}k^{25} - 1967044844910430876860416a_{28}k^{27} - 693575525634287935244206080a_{30}k^{29} - \\
& 278846808228005417477465964544a_{32}k^{31} - 126799861926498005417315327279104a_{34}k^{33} - 64751460964231904a_{36}k^{35} - \\
& 8a_4k^3 - 96a_6k^5 - 2176a_8k^7 \\
& \text{Constraints on coefficients from real part of equation:} \\
& b \rightarrow \frac{12018651620450962379065929102782543261054533632000000000a_{36}\chi^{18}}{A^2} \\
& a_{34} \rightarrow -630a_{36}k^2 - 23988a_{36} \\
& a_{32} \rightarrow 58905a_{36}k^4 + 13457268a_{36}k^2 + 266897280a_{36} \\
& a_{30} \rightarrow -1947792a_{36}k^6 - 1112467488a_{36}k^4 - 132381050880a_{36}k^2 - 1829130633472a_{36} \\
& a_{28} \rightarrow 30260340a_{36}k^8 + 32261557152a_{36}k^6 + 9597626188800a_{36}k^4 + 795671825560320a_{36}k^2 + \\
& 8647729139879424a_{36} \\
& a_{26} \rightarrow -254186856a_{36}k^{10} - 435531021552a_{36}k^8 - 241860179957760a_{36}k^6 - 50127325010300160a_{36}k^4 - \blacksquare \\
& 3268841614874422272a_{36}k^2 - 29933436081188689920a_{36} \\
& a_{24} \rightarrow 1251677700a_{36}k^{12} + 3145501822320a_{36}k^{10} + 2807305660224000a_{36}k^8 + 1086092041889836800a_{36}k^6 + \blacksquare \\
& 177062254139031206400a_{36}k^4 + 9728366726386324224000a_{36}k^2 + 78569552955302676971520a_{36} \\
& a_{22} \rightarrow -3796297200a_{36}k^{14} - 13153916711520a_{36}k^{12} - 17218141382707200a_{36}k^{10} - 10705764412914105600a_{36}k^8 - \\
& 3257945476158174197760a_{36}k^6 - 447504869413770914304000a_{36}k^4 - 21685196615663538844139520a_{36}k^2 - \blacksquare \\
& 159802585247117252622090240a_{36} \\
& a_{20} \rightarrow 7307872110a_{36}k^{16} + 33390711652320a_{36}k^{14} + 60263494839475200a_{36}k^{12} + 54956257319625742080a_{36}k^{10} + \\
& 26878050178304937131520a_{36}k^8 + 6891574988972072080281600a_{36}k^6 + 834880069703046245499371520a_{36}k^4 + \\
& 36914397192084085355702845440a_{36}k^2 + 255151504031008726016088145920a_{36} \\
& a_{18} \rightarrow -9075135300a_{36}k^{18} - 52868626782840a_{36}k^{16} - 125824879335168000a_{36}k^{14} - 158207407435286227200a_{36}k^{12} - \\
& 158207407435286227200a_{36}k^{10} - 158207407435286227200a_{36}k^8 - 158207407435286227200a_{36}k^6 - 158207407435286227200a_{36}k^4 - \\
& 158207407435286227200a_{36}k^2 - 158207407435286227200a_{36}
\end{aligned}$$

$$\begin{aligned}
& 113485100752843067888640a_{36}k^{10} - 46764258853739060544768000a_{36}k^8 - 10575147549571919109658705920a_{36}k^6 \\
& 1168955911082662702930590105600a_{36}k^4 - 48478785765891657943056747724800a_{36}k^2 - 321996120642301720a_{36} \\
& a_{16} \rightarrow 7307872110a_{36}k^{20} + 52868626782840a_{36}k^{18} + 160426721152339200a_{36}k^{16} + 265997069643942777600a_{36}k^{14} \\
& 263079097199772566469120a_{36}k^{12} + 158998480102712805852211200a_{36}k^{10} + 57785627681589415134920785920a_{36}k^8 \\
& 11923350293043159569892019077120a_{36}k^6 + 1236209037030237277547947066982400a_{36}k^4 + 492654064582720a_{36}k^2 \\
& 321724106696202377965158439304822784a_{36} \\
& a_{14} \rightarrow -3796297200a_{36}k^{22} - 33390711652320a_{36}k^{20} - 125824879335168000a_{36}k^{18} - 265997069643942777600a_{36}k^{16} \\
& 346917490812886900838400a_{36}k^{14} - 289088145641296010640384000a_{36}k^{12} - 1540950071509051070264554290a_{36}k^{10} \\
& 51100072684470683870965796044800a_{36}k^8 - 9889672296241898220383576535859200a_{36}k^6 - 985308129165440a_{36}k^4 \\
& 38606892803544285355819012716578734080a_{36}k^2 - 253731031937834561675053092557209731072a_{36} \\
& a_{12} \rightarrow 1251677700a_{36}k^{24} + 13153916711520a_{36}k^{22} + 60263494839475200a_{36}k^{20} + 158207407435286227200a_{36}k^{18} \\
& 263079097199772566469120a_{36}k^{16} + 289088145641296010640384000a_{36}k^{14} + 212464328041399465748597637120a_{36}k^{12} \\
& 103335702539707382939064165335040a_{36}k^{10} + 32141434962786169216246623741542400a_{36}k^8 + \\
& 5977535983603689281935916221967892480a_{36}k^6 + 585537874187088327896588359534777466880a_{36}k^4 + \\
& 23089523906342945112429831422706085527552a_{36}k^2 + 156670693044825479915899835459989311324160a_{36} \\
& a_{10} \rightarrow -254186856a_{36}k^{26} - 3145501822320a_{36}k^{24} - 17218141382707200a_{36}k^{22} - 54956257319625742080a_{36}k^{20} \\
& 113485100752843067888640a_{36}k^{18} - 158998480102712805852211200a_{36}k^{16} - 1540950071509051070264554290a_{36}k^{14} \\
& 103335702539707382939064165335040a_{36}k^{12} - 47140771278753048183828381487595520a_{36}k^{10} - \\
& 14089906247065839021706088237495746560a_{36}k^8 - 2576366646423188642744988781953020854272a_{36}k^6 - \\
& 253984762969772396236728145649766940803072a_{36}k^4 - 10340265740958481674449389140359294547394560a_{36}k^2 \\
& 74661575881915069106460133360216321806041088a_{36} \\
& a_8 \rightarrow 30260340a_{36}k^{28} + 435531021552a_{36}k^{26} + 2807305660224000a_{36}k^{24} + 10705764412914105600a_{36}k^{22} + \\
& 26878050178304937131520a_{36}k^{20} + 46764258853739060544768000a_{36}k^{18} + 57785627681589415134920785920a_{36}k^{16} \\
& 51100072684470683870965796044800a_{36}k^{14} + 32141434962786169216246623741542400a_{36}k^{12} + \\
& 14089906247065839021706088237495746560a_{36}k^{10} + 4140589253180124604411589113853069230080a_{36}k^8 + \\
& 761954288909317188710184436949300822409216a_{36}k^6 + 77551993057188612558370418552694709105459200a_{36}k^4 \\
& 3359770914686178109790706001209734481271848960a_{36}k^2 + 2683753222518015514828335759334817172117a_{36} \\
& a_6 \rightarrow -1947792a_{36}k^{30} - 32261557152a_{36}k^{28} - 241860179957760a_{36}k^{26} - 1086092041889836800a_{36}k^{24} - \\
& 3257945476158174197760a_{36}k^{22} - 6891574988972072080281600a_{36}k^{20} - 10575147549571919109658705920a_{36}k^{18} \\
& 11923350293043159569892019077120a_{36}k^{16} - 9889672296241898220383576535859200a_{36}k^{14} - 5977535983603200a_{36}k^{12} \\
& 2576366646423188642744988781953020854272a_{36}k^{10} - 761954288909317188710184436949300822409216a_{36}k^8 \\
& 144763720373418743442291447965030123663523840a_{36}k^6 - 15678930935202164512356628005645427579268a_{36}k^4 \\
& 751450902305044344151934012613748808192788267008a_{36}k^2 - 70164101606991920459388297298590733546a_{36} \\
& a_4 \rightarrow 58905a_{36}k^{32} + 1112467488a_{36}k^{30} + 9597626188800a_{36}k^{28} + 50127325010300160a_{36}k^{26} +
\end{aligned}$$

$$\begin{aligned}
& 177062254139031206400a_{36}k^{24}+447504869413770914304000a_{36}k^{22}+834880069703046245499371520a_{36}k^{20}+ \\
& 1168955911082662702930590105600a_{36}k^{18}+1236209037030237277547947066982400a_{36}k^{16}+9853081291654 \\
& 585537874187088327896588359534777466880a_{36}k^{12}+253984762969772396236728145649766940803072a_{36}k^{10}+ \\
& 77551993057188612558370418552694709105459200a_{36}k^8+156789309352021645123566280056454275792686 \\
& 1878627255762610860379835031534372020481970667520a_{36}k^4+1052461524104878806890824459478861003 \\
& 1255512433071508710466064033663261763463639203840000a_{36} \\
& a_2 \rightarrow -630a_{36}k^{34}-13457268a_{36}k^{32}-132381050880a_{36}k^{30}-795671825560320a_{36}k^{28}-3268841614874422272a_{36}k^{26}- \\
& 9728366726386324224000a_{36}k^{24}-21685196615663538844139520a_{36}k^{22}-36914397192084085355702845440a_{36}k^{20}- \\
& 48478785765891657943056747724800a_{36}k^{18}-49265406458272164411559749082152960a_{36}k^{16}- \\
& 38606892803544285355819012716578734080a_{36}k^{14}-23089523906342945112429831422706085527552a_{36}k^{12}- \\
& 10340265740958481674449389140359294547394560a_{36}k^{10}-33597709146861781097907060012097344812718 \\
& 751450902305044344151934012613748808192788267008a_{36}k^6-10524615241048788068908244594788610031 \\
& 7533074598429052262796384201979570580781835223040000a_{36}k^2-1371242870960140362333684132417783 \\
& \omega \rightarrow -a_1k-35a_{36}k^{36}-791604a_{36}k^{34}-8273815680a_{36}k^{32}-53044788370688a_{36}k^{30}-233488686776744448a_{36}k^{28}- \\
& 748335902029717248000a_{36}k^{26}-1807099717971961570344960a_{36}k^{24}-3355854290189462305063895040a_{36}k^{22}- \\
& 4847878576589165794305674772480a_{36}k^{20}-5473934050919129379062194342461440a_{36}k^{18}-48258616004430 \\
& 3298503415191849301775690203243726503936a_{36}k^{14}-1723377623493080279074898190059882424565760a_{36}k^{12}- \\
& 671954182937235621958141200241946896254369792a_{36}k^{10}-1878627255762610860379835031534372020481 \\
& 35082050803495960229694148649295366773299740672000a_{36}k^6-376653729921452613139819210098978529 \\
& 137124287096014036233368413241778344984246747136000000a_{36}k^2+68750656664665791525495713463395
\end{aligned}$$

y(z) - function:

$$\frac{68719476736a^{18}A}{(4a^2e^z + \chi e^{-z})^{18}}$$

u(x, t) - function:

$$\frac{68719476736a^{18}Ae^{i(kx-\omega t)}}{(4a^2e^{C0t+x} + \chi e^{-C0t-x})^{18}}$$