Target equation:

$$-ia_1u^{(1,0)}(x,t)+a_{10}u^{(10,0)}(x,t)-ia_{11}u^{(11,0)}(x,t)+a_{12}u^{(12,0)}(x,t)-ia_{13}u^{(13,0)}(x,t)+a_{14}u^{(14,0)}(x,t)-$$

$$ia_{15}u^{(15,0)}(x,t)+a_{16}u^{(16,0)}(x,t)-ia_{17}u^{(17,0)}(x,t)+a_{18}u^{(18,0)}(x,t)-ia_{19}u^{(19,0)}(x,t)+a_2u^{(2,0)}(x,t)+$$

$$a_{20}u^{(20,0)}(x,t)-ia_{21}u^{(21,0)}(x,t)+a_{22}u^{(22,0)}(x,t)-ia_{23}u^{(23,0)}(x,t)+a_{24}u^{(24,0)}(x,t)-ia_{25}u^{(25,0)}(x,t)+$$

$$a_{26}u^{(26,0)}(x,t)-ia_{27}u^{(27,0)}(x,t)+a_{28}u^{(28,0)}(x,t)-ia_{29}u^{(29,0)}(x,t)-ia_3u^{(3,0)}(x,t)+a_{30}u^{(30,0)}(x,t)-$$

$$ia_{31}u^{(31,0)}(x,t)+a_{32}u^{(32,0)}(x,t)-ia_{33}u^{(33,0)}(x,t)+a_{34}u^{(34,0)}(x,t)-ia_{35}u^{(35,0)}(x,t)+a_{36}u^{(36,0)}(x,t)+$$

$$a_4u^{(4,0)}(x,t)-ia_5u^{(5,0)}(x,t)+a_6u^{(6,0)}(x,t)-ia_7u^{(7,0)}(x,t)+a_8u^{(8,0)}(x,t)-ia_9u^{(9,0)}(x,t)-bu(x,t)\,|u(x,t)|^2+$$

$$iu^{(0,1)}(x,t)=0$$

Substitutions:

$$N = 18$$
$$u(x,t) \to y(z)e^{i(kx-\omega t)}$$
$$z \to x - \text{C0}t$$
$$y(z) \to AR(z)^{18}$$
$$R'(z)^2 = R(z)^2\left(1 - \chi R(z)^2\right)$$

Imaginary part of equation after substitutions:

$376992a_{36}y^{(5)}(z)k^{31}-324632a_{35}y^{(5)}(z)k^{30}-278256a_{34}y^{(5)}(z)k^{29}-8347680a_{36}y^{(7)}(z)k^{29}+237336a_{33}y^{(5)}(z)k^{28}+$

$6724520a_{35}y^{(7)}(z)k^{28} + 201376a_{32}y^{(5)}(z)k^{27} + 5379616a_{34}y^{(7)}(z)k^{27} + 94143280a_{36}y^{(9)}(z)k^{27} -$

$169911a_{31}y^{(5)}(z)k^{26}-4272048a_{33}y^{(7)}(z)k^{26}-70607460a_{35}y^{(9)}(z)k^{26}-142506a_{30}y^{(5)}(z)k^{25}-3365856a_{32}y^{(7)}(z)k$

$52451256a_{34}y^{(9)}(z)k^{25} - 600805296a_{36}y^{(11)}(z)k^{25} + 118755a_{29}y^{(5)}(z)k^{24} + 2629575a_{31}y^{(7)}(z)k^{24} +$

$38567100a_{33}y^{(9)}(z)k^{24} + 417225900a_{35}y^{(11)}(z)k^{24} + 98280a_{28}y^{(5)}(z)k^{23} + 2035800a_{30}y^{(7)}(z)k^{23} +$

$28048800a_{32}y^{(9)}(z)k^{23}+286097760a_{34}y^{(11)}(z)k^{23}+2310789600a_{36}y^{(13)}(z)k^{23}-80730a_{27}y^{(5)}(z)k^{22}-$

$1560780a_{29}y^{(7)}(z)k^{22}-20160075a_{31}y^{(9)}(z)k^{22}-193536720a_{33}y^{(11)}(z)k^{22}-1476337800a_{35}y^{(13)}(z)k^{22}-$

$65780a_{26}y^{(5)}(z)k^{21} - 1184040a_{28}y^{(7)}(z)k^{21} - 14307150a_{30}y^{(9)}(z)k^{21} - 129024480a_{32}y^{(11)}(z)k^{21} -$

$927983760a_{34}y^{(13)}(z)k^{21} - 5567902560a_{36}y^{(15)}(z)k^{21}+53130a_{25}y^{(5)}(z)k^{20} + 888030a_{27}y^{(7)}(z)k^{20} +$

$10015005a_{29}y^{(9)}(z)k^{20}+84672315a_{31}y^{(11)}(z)k^{20}+573166440a_{33}y^{(13)}(z)k^{20}+3247943160a_{35}y^{(15)}(z)k^{20}+$

$42504a_{24}y^{(5)}(z)k^{19}+657800a_{26}y^{(7)}(z)k^{19}+6906900a_{28}y^{(9)}(z)k^{19}+54627300a_{30}y^{(11)}(z)k^{19}+347373600a_{32}y^{(13)}($

$1855967520a_{34}y^{(15)}(z)k^{19}+8597496600a_{36}y^{(17)}(z)k^{19}-33649a_{23}y^{(5)}(z)k^{18}-480700a_{25}y^{(7)}(z)k^{18}-$

$4686825a_{27}y^{(9)}(z)k^{18}-34597290a_{29}y^{(11)}(z)k^{18}-206253075a_{31}y^{(13)}(z)k^{18}-1037158320a_{33}y^{(15)}(z)k^{18}-$

$4537567650a_{35}y^{(17)}(z)k^{18} - 26334a_{22}y^{(5)}(z)k^{17} - 346104a_{24}y^{(7)}(z)k^{17} - 3124550a_{26}y^{(9)}(z)k^{17} -$

$21474180a_{28}y^{(11)}(z)k^{17}-119759850a_{30}y^{(13)}(z)k^{17}-565722720a_{32}y^{(15)}(z)k^{17}-2333606220a_{34}y^{(17)}(z)k^{17}-$

$8597496600a_{36}y^{(19)}(z)k^{17} + 20349a_{21}y^{(5)}(z)k^{16} + 245157a_{23}y^{(7)}(z)k^{16} + 2042975a_{25}y^{(9)}(z)k^{16} +$

$13037895a_{27}y^{(11)}(z)k^{16}+67863915a_{29}y^{(13)}(z)k^{16}+300540195a_{31}y^{(15)}(z)k^{16}+1166803110a_{33}y^{(17)}(z)k^{16}+$

$4059928950a_{35}y^{(19)}(z)k^{16} + 15504a_{20}y^{(5)}(z)k^{15} + 170544a_{22}y^{(7)}(z)k^{15} + 1307504a_{24}y^{(9)}(z)k^{15} +$

$7726160a_{26}y^{(11)}(z)k^{15}+37442160a_{28}y^{(13)}(z)k^{15}+155117520a_{30}y^{(15)}(z)k^{15}+565722720a_{32}y^{(17)}(z)k^{15}+$

$$1855967520a_{34}y^{(19)}(z)k^{15}+5567902560a_{36}y^{(21)}(z)k^{15}-11628a_{19}y^{(5)}(z)k^{14}-116280a_{21}y^{(7)}(z)k^{14}-$$

$$817190a_{23}y^{(9)}(z)k^{14}-4457400a_{25}y^{(11)}(z)k^{14}-20058300a_{27}y^{(13)}(z)k^{14}-77558760a_{29}y^{(15)}(z)k^{14}-$$

$$265182525a_{31}y^{(17)}(z)k^{14}-818809200a_{33}y^{(19)}(z)k^{14}-2319959400a_{35}y^{(21)}(z)k^{14}-8568a_{18}y^{(5)}(z)k^{13}-$$

$$77520a_{20}y^{(7)}(z)k^{13}-497420a_{22}y^{(9)}(z)k^{13}-2496144a_{24}y^{(11)}(z)k^{13}-10400600a_{26}y^{(13)}(z)k^{13}-37442160a_{28}y^{(15)}($$

$$119759850a_{30}y^{(17)}(z)k^{13}-347373600a_{32}y^{(19)}(z)k^{13}-927983760a_{34}y^{(21)}(z)k^{13}-2310789600a_{36}y^{(23)}(z)k^{13}+$$

$$6188a_{17}y^{(5)}(z)k^{12}+50388a_{19}y^{(7)}(z)k^{12}+293930a_{21}y^{(9)}(z)k^{12}+1352078a_{23}y^{(11)}(z)k^{12}+5200300a_{25}y^{(13)}(z)k^{12}+$$

$$17383860a_{27}y^{(15)}(z)k^{12}+51895935a_{29}y^{(17)}(z)k^{12}+141120525a_{31}y^{(19)}(z)k^{12}+354817320a_{33}y^{(21)}(z)k^{12}+$$

$$834451800a_{35}y^{(23)}(z)k^{12}+4368a_{16}y^{(5)}(z)k^{11}+31824a_{18}y^{(7)}(z)k^{11}+167960a_{20}y^{(9)}(z)k^{11}+705432a_{22}y^{(11)}(z)k^{11}-$$

$$2496144a_{24}y^{(13)}(z)k^{11}+7726160a_{26}y^{(15)}(z)k^{11}+21474180a_{28}y^{(17)}(z)k^{11}+54627300a_{30}y^{(19)}(z)k^{11}+$$

$$129024480a_{32}y^{(21)}(z)k^{11}+286097760a_{34}y^{(23)}(z)k^{11}+600805296a_{36}y^{(25)}(z)k^{11}-3003a_{15}y^{(5)}(z)k^{10}-$$

$$19448a_{17}y^{(7)}(z)k^{10}-92378a_{19}y^{(9)}(z)k^{10}-352716a_{21}y^{(11)}(z)k^{10}-1144066a_{23}y^{(13)}(z)k^{10}-3268760a_{25}y^{(15)}(z)k^{10}-$$

$$8436285a_{27}y^{(17)}(z)k^{10}-20030010a_{29}y^{(19)}(z)k^{10}-44352165a_{31}y^{(21)}(z)k^{10}-92561040a_{33}y^{(23)}(z)k^{10}-$$

$$183579396a_{35}y^{(25)}(z)k^{10}-2002a_{14}y^{(5)}(z)k^{9}-11440a_{16}y^{(7)}(z)k^{9}-48620a_{18}y^{(9)}(z)k^{9}-167960a_{20}y^{(11)}(z)k^{9}-$$

$$497420a_{22}y^{(13)}(z)k^{9}-1307504a_{24}y^{(15)}(z)k^{9}-3124550a_{26}y^{(17)}(z)k^{9}-6906900a_{28}y^{(19)}(z)k^{9}-14307150a_{30}y^{(21)}(z$$

$$28048800a_{32}y^{(23)}(z)k^{9}-52451256a_{34}y^{(25)}(z)k^{9}-94143280a_{36}y^{(27)}(z)k^{9}+1287a_{13}y^{(5)}(z)k^{8}+6435a_{15}y^{(7)}(z)k^{8}+$$

$$24310a_{17}y^{(9)}(z)k^{8}+75582a_{19}y^{(11)}(z)k^{8}+203490a_{21}y^{(13)}(z)k^{8}+490314a_{23}y^{(15)}(z)k^{8}+1081575a_{25}y^{(17)}(z)k^{8}+$$

$$2220075a_{27}y^{(19)}(z)k^{8}+4292145a_{29}y^{(21)}(z)k^{8}+7888725a_{31}y^{(23)}(z)k^{8}+13884156a_{33}y^{(25)}(z)k^{8}+$$

$$23535820a_{35}y^{(27)}(z)k^{8}+792a_{12}y^{(5)}(z)k^{7}+3432a_{14}y^{(7)}(z)k^{7}+11440a_{16}y^{(9)}(z)k^{7}+31824a_{18}y^{(11)}(z)k^{7}+$$

$$77520a_{20}y^{(13)}(z)k^{7}+170544a_{22}y^{(15)}(z)k^{7}+346104a_{24}y^{(17)}(z)k^{7}+657800a_{26}y^{(19)}(z)k^{7}+1184040a_{28}y^{(21)}(z)k^{7}+$$

$$2035800a_{30}y^{(23)}(z)k^{7}+3365856a_{32}y^{(25)}(z)k^{7}+5379616a_{34}y^{(27)}(z)k^{7}+8347680a_{36}y^{(29)}(z)k^{7}-$$

$$462a_{11}y^{(5)}(z)k^{6}-1716a_{13}y^{(7)}(z)k^{6}-5005a_{15}y^{(9)}(z)k^{6}-12376a_{17}y^{(11)}(z)k^{6}-27132a_{19}y^{(13)}(z)k^{6}-$$

$$54264a_{21}y^{(15)}(z)k^{6}-100947a_{23}y^{(17)}(z)k^{6}-177100a_{25}y^{(19)}(z)k^{6}-296010a_{27}y^{(21)}(z)k^{6}-475020a_{29}y^{(23)}(z)k^{6}-$$

$$736281a_{31}y^{(25)}(z)k^{6}-1107568a_{33}y^{(27)}(z)k^{6}-1623160a_{35}y^{(29)}(z)k^{6}-252a_{10}y^{(5)}(z)k^{5}-792a_{12}y^{(7)}(z)k^{5}-$$

$$2002a_{14}y^{(9)}(z)k^{5}-4368a_{16}y^{(11)}(z)k^{5}-8568a_{18}y^{(13)}(z)k^{5}-15504a_{20}y^{(15)}(z)k^{5}-26334a_{22}y^{(17)}(z)k^{5}-$$

$$42504a_{24}y^{(19)}(z)k^{5}-65780a_{26}y^{(21)}(z)k^{5}-98280a_{28}y^{(23)}(z)k^{5}-142506a_{30}y^{(25)}(z)k^{5}-201376a_{32}y^{(27)}(z)k^{5}-$$

$$278256a_{34}y^{(29)}(z)k^{5}-376992a_{36}y^{(31)}(z)k^{5}+126a_{9}y^{(5)}(z)k^{4}+330a_{11}y^{(7)}(z)k^{4}+715a_{13}y^{(9)}(z)k^{4}+$$

$$1365a_{15}y^{(11)}(z)k^{4}+2380a_{17}y^{(13)}(z)k^{4}+3876a_{19}y^{(15)}(z)k^{4}+5985a_{21}y^{(17)}(z)k^{4}+8855a_{23}y^{(19)}(z)k^{4}+$$

$$12650a_{25}y^{(21)}(z)k^{4}+17550a_{27}y^{(23)}(z)k^{4}+23751a_{29}y^{(25)}(z)k^{4}+31465a_{31}y^{(27)}(z)k^{4}+40920a_{33}y^{(29)}(z)k^{4}+$$

$$52360a_{35}y^{(31)}(z)k^{4}+56a_{8}y^{(5)}(z)k^{3}+120a_{10}y^{(7)}(z)k^{3}+220a_{12}y^{(9)}(z)k^{3}+364a_{14}y^{(11)}(z)k^{3}+560a_{16}y^{(13)}(z)k^{3}+$$

$$816a_{18}y^{(15)}(z)k^{3}+1140a_{20}y^{(17)}(z)k^{3}+1540a_{22}y^{(19)}(z)k^{3}+2024a_{24}y^{(21)}(z)k^{3}+2600a_{26}y^{(23)}(z)k^{3}+$$

$$3276a_{28}y^{(25)}(z)k^{3}+4060a_{30}y^{(27)}(z)k^{3}+4960a_{32}y^{(29)}(z)k^{3}+5984a_{34}y^{(31)}(z)k^{3}+7140a_{36}y^{(33)}(z)k^{3}-$$

$$21a_{7}y^{(5)}(z)k^{2}-36a_{9}y^{(7)}(z)k^{2}-55a_{11}y^{(9)}(z)k^{2}-78a_{13}y^{(11)}(z)k^{2}-105a_{15}y^{(13)}(z)k^{2}-136a_{17}y^{(15)}(z)k^{2}-$$

$$171a_{19}y^{(17)}(z)k^{2}-210a_{21}y^{(19)}(z)k^{2}-253a_{23}y^{(21)}(z)k^{2}-300a_{25}y^{(23)}(z)k^{2}-351a_{27}y^{(25)}(z)k^{2}-$$

$$406a_{29}y^{(27)}(z)k^{2}-465a_{31}y^{(29)}(z)k^{2}-528a_{33}y^{(31)}(z)k^{2}-595a_{35}y^{(33)}(z)k^{2}-6a_{6}y^{(5)}(z)k-8a_{8}y^{(7)}(z)k-$$

$$10a_{10}y^{(9)}(z)k - 12a_{12}y^{(11)}(z)k - 14a_{14}y^{(13)}(z)k - 16a_{16}y^{(15)}(z)k - 18a_{18}y^{(17)}(z)k - 20a_{20}y^{(19)}(z)k -$$

$$22a_{22}y^{(21)}(z)k - 24a_{24}y^{(23)}(z)k - 26a_{26}y^{(25)}(z)k - 28a_{28}y^{(27)}(z)k - 30a_{30}y^{(29)}(z)k - 32a_{32}y^{(31)}(z)k -$$

$$34a_{34}y^{(33)}(z)k - 36a_{36}y^{(35)}(z)k + (a_1 - C0 + k\,(k\,(k\,(4a_4 + k\,(5a_5 + k\,(k\,(k\,(8a_8 + k\,(9a_9 + k\,(k\,(k\,(12a_{12} + k\,($$

$$(a_3 + k\,(k\,(k\,(20a_6 + k\,(35a_7 + k\,(k\,(k\,(120a_{10} + k\,(165a_{11} + k\,(k\,(k\,(364a_{14} + k\,(455a_{15} + k\,(k\,(k\,(816a_{18} + k\,($$

$$a_5y^{(5)}(z) + a_7y^{(7)}(z) + a_9y^{(9)}(z) + a_{11}y^{(11)}(z) + a_{13}y^{(13)}(z) + a_{15}y^{(15)}(z) + a_{17}y^{(17)}(z) + a_{19}y^{(19)}(z) +$$

$$a_{21}y^{(21)}(z) + a_{23}y^{(23)}(z) + a_{25}y^{(25)}(z) + a_{27}y^{(27)}(z) + a_{29}y^{(29)}(z) + a_{31}y^{(31)}(z) + a_{33}y^{(33)}(z) +$$

$$a_{35}y^{(35)}(z) = 0$$

Real part of equation after substitutions:

$$58905a_{36}y^{(4)}(z)k^{32} - 52360a_{35}y^{(4)}(z)k^{31} - 46376a_{34}y^{(4)}(z)k^{30} - 1947792a_{36}y^{(6)}(z)k^{30} + 40920a_{33}y^{(4)}(z)k^{29} + \blacksquare$$

$$1623160a_{35}y^{(6)}(z)k^{29} + 35960a_{32}y^{(4)}(z)k^{28} + 1344904a_{34}y^{(6)}(z)k^{28} + 30260340a_{36}y^{(8)}(z)k^{28} - 31465a_{31}y^{(4)}(z)k^{27} -$$

$$1107568a_{33}y^{(6)}(z)k^{27} - 23535820a_{35}y^{(8)}(z)k^{27} - 27405a_{30}y^{(4)}(z)k^{26} - 906192a_{32}y^{(6)}(z)k^{26} - 18156204a_{34}y^{(8)}(z)k$$

$$254186856a_{36}y^{(10)}(z)k^{26} + 23751a_{29}y^{(4)}(z)k^{25} + 736281a_{31}y^{(6)}(z)k^{25} + 13884156a_{33}y^{(8)}(z)k^{25} +$$

$$183579396a_{35}y^{(10)}(z)k^{25} + 20475a_{28}y^{(4)}(z)k^{24} + 593775a_{30}y^{(6)}(z)k^{24} + 10518300a_{32}y^{(8)}(z)k^{24} +$$

$$131128140a_{34}y^{(10)}(z)k^{24} + 1251677700a_{36}y^{(12)}(z)k^{24} - 17550a_{27}y^{(4)}(z)k^{23} - 475020a_{29}y^{(6)}(z)k^{23} -$$

$$7888725a_{31}y^{(8)}(z)k^{23} - 92561040a_{33}y^{(10)}(z)k^{23} - 834451800a_{35}y^{(12)}(z)k^{23} - 14950a_{26}y^{(4)}(z)k^{22} -$$

$$376740a_{28}y^{(6)}(z)k^{22} - 5852925a_{30}y^{(8)}(z)k^{22} - 64512240a_{32}y^{(10)}(z)k^{22} - 548354040a_{34}y^{(12)}(z)k^{22} -$$

$$3796297200a_{36}y^{(14)}(z)k^{22} + 12650a_{25}y^{(4)}(z)k^{21} + 296010a_{27}y^{(6)}(z)k^{21} + 4292145a_{29}y^{(8)}(z)k^{21} +$$

$$44352165a_{31}y^{(10)}(z)k^{21} + 354817320a_{33}y^{(12)}(z)k^{21} + 2319959400a_{35}y^{(14)}(z)k^{21} + 10626a_{24}y^{(4)}(z)k^{20} + \blacksquare$$

$$230230a_{26}y^{(6)}(z)k^{20} + 3108105a_{28}y^{(8)}(z)k^{20} + 30045015a_{30}y^{(10)}(z)k^{20} + 225792840a_{32}y^{(12)}(z)k^{20} +$$

$$1391975640a_{34}y^{(14)}(z)k^{20} + 7307872110a_{36}y^{(16)}(z)k^{20} - 8855a_{23}y^{(4)}(z)k^{19} - 177100a_{25}y^{(6)}(z)k^{19} -$$

$$2220075a_{27}y^{(8)}(z)k^{19} - 20030010a_{29}y^{(10)}(z)k^{19} - 141120525a_{31}y^{(12)}(z)k^{19} - 818809200a_{33}y^{(14)}(z)k^{19} - \blacksquare$$

$$4059928950a_{35}y^{(16)}(z)k^{19} - 7315a_{22}y^{(4)}(z)k^{18} - 134596a_{24}y^{(6)}(z)k^{18} - 1562275a_{26}y^{(8)}(z)k^{18} -$$

$$13123110a_{28}y^{(10)}(z)k^{18} - 86493225a_{30}y^{(12)}(z)k^{18} - 471435600a_{32}y^{(14)}(z)k^{18} - 2203961430a_{34}y^{(16)}(z)k^{18} - \blacksquare$$

$$9075135300a_{36}y^{(18)}(z)k^{18} + 5985a_{21}y^{(4)}(z)k^{17} + 100947a_{23}y^{(6)}(z)k^{17} + 1081575a_{25}y^{(8)}(z)k^{17} + 8436285a_{27}y^{(10)}(z$$

$$51895935a_{29}y^{(12)}(z)k^{17} + 265182525a_{31}y^{(14)}(z)k^{17} + 1166803110a_{33}y^{(16)}(z)k^{17} + 4537567650a_{35}y^{(18)}(z)k^{17} + \blacksquare$$

$$4845a_{20}y^{(4)}(z)k^{16} + 74613a_{22}y^{(6)}(z)k^{16} + 735471a_{24}y^{(8)}(z)k^{16} + 5311735a_{26}y^{(10)}(z)k^{16} + 30421755a_{28}y^{(12)}(z)k^{16} -$$

$$145422675a_{30}y^{(14)}(z)k^{16} + 601080390a_{32}y^{(16)}(z)k^{16} + 2203961430a_{34}y^{(18)}(z)k^{16} + 7307872110a_{36}y^{(20)}(z)k^{16} - \blacksquare$$

$$3876a_{19}y^{(4)}(z)k^{15} - 54264a_{21}y^{(6)}(z)k^{15} - 490314a_{23}y^{(8)}(z)k^{15} - 3268760a_{25}y^{(10)}(z)k^{15} - 17383860a_{27}y^{(12)}(z)k^{15} -$$

$$77558760a_{29}y^{(14)}(z)k^{15} - 300540195a_{31}y^{(16)}(z)k^{15} - 1037158320a_{33}y^{(18)}(z)k^{15} - 3247943160a_{35}y^{(20)}(z)k^{15} - \blacksquare$$

$$3060a_{18}y^{(4)}(z)k^{14} - 38760a_{20}y^{(6)}(z)k^{14} - 319770a_{22}y^{(8)}(z)k^{14} - 1961256a_{24}y^{(10)}(z)k^{14} - 9657700a_{26}y^{(12)}(z)k^{14} -$$

$$40116600a_{28}y^{(14)}(z)k^{14} - 145422675a_{30}y^{(16)}(z)k^{14} - 471435600a_{32}y^{(18)}(z)k^{14} - 1391975640a_{34}y^{(20)}(z)k^{14} - \blacksquare$$

$$3796297200a_{36}y^{(22)}(z)k^{14} + 2380a_{17}y^{(4)}(z)k^{13} + 27132a_{19}y^{(6)}(z)k^{13} + 203490a_{21}y^{(8)}(z)k^{13} + 1144066a_{23}y^{(10)}(z)k$$

$$5200300a_{25}y^{(12)}(z)k^{13} + 20058300a_{27}y^{(14)}(z)k^{13} + 67863915a_{29}y^{(16)}(z)k^{13} + 206253075a_{31}y^{(18)}(z)k^{13} + \blacksquare$$

$$573166440a_{33}y^{(20)}(z)k^{13} + 1476337800a_{35}y^{(22)}(z)k^{13} + 1820a_{16}y^{(4)}(z)k^{12} + 18564a_{18}y^{(6)}(z)k^{12} +$$

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$$125970a_{20}y^{(8)}(z)k^{12} + 646646a_{22}y^{(10)}(z)k^{12} + 2704156a_{24}y^{(12)}(z)k^{12} + 9657700a_{26}y^{(14)}(z)k^{12} +$$

$$30421755a_{28}y^{(16)}(z)k^{12}+86493225a_{30}y^{(18)}(z)k^{12}+225792840a_{32}y^{(20)}(z)k^{12}+548354040a_{34}y^{(22)}(z)k^{12}+$$

$$1251677700a_{36}y^{(24)}(z)k^{12}-1365a_{15}y^{(4)}(z)k^{11}-12376a_{17}y^{(6)}(z)k^{11}-75582a_{19}y^{(8)}(z)k^{11}-352716a_{21}y^{(10)}(z)k^{11}-$$

$$1352078a_{23}y^{(12)}(z)k^{11}-4457400a_{25}y^{(14)}(z)k^{11}-13037895a_{27}y^{(16)}(z)k^{11}-34597290a_{29}y^{(18)}(z)k^{11}-$$

$$84672315a_{31}y^{(20)}(z)k^{11}-193536720a_{33}y^{(22)}(z)k^{11}-417225900a_{35}y^{(24)}(z)k^{11}-1001a_{14}y^{(4)}(z)k^{10}-$$

$$8008a_{16}y^{(6)}(z)k^{10}-43758a_{18}y^{(8)}(z)k^{10}-184756a_{20}y^{(10)}(z)k^{10}-646646a_{22}y^{(12)}(z)k^{10}-1961256a_{24}y^{(14)}(z)k^{10}-$$

$$5311735a_{26}y^{(16)}(z)k^{10}-13123110a_{28}y^{(18)}(z)k^{10}-30045015a_{30}y^{(20)}(z)k^{10}-64512240a_{32}y^{(22)}(z)k^{10}-$$

$$131128140a_{34}y^{(24)}(z)k^{10}-254186856a_{36}y^{(26)}(z)k^{10}+715a_{13}y^{(4)}(z)k^{9}+5005a_{15}y^{(6)}(z)k^{9}+24310a_{17}y^{(8)}(z)k^{9}+$$

$$92378a_{19}y^{(10)}(z)k^{9}+293930a_{21}y^{(12)}(z)k^{9}+817190a_{23}y^{(14)}(z)k^{9}+2042975a_{25}y^{(16)}(z)k^{9}+4686825a_{27}y^{(18)}(z)k^{9}+$$

$$10015005a_{29}y^{(20)}(z)k^{9}+20160075a_{31}y^{(22)}(z)k^{9}+38567100a_{33}y^{(24)}(z)k^{9}+70607460a_{35}y^{(26)}(z)k^{9}+$$

$$495a_{12}y^{(4)}(z)k^{8}+3003a_{14}y^{(6)}(z)k^{8}+12870a_{16}y^{(8)}(z)k^{8}+43758a_{18}y^{(10)}(z)k^{8}+125970a_{20}y^{(12)}(z)k^{8}+$$

$$319770a_{22}y^{(14)}(z)k^{8}+735471a_{24}y^{(16)}(z)k^{8}+1562275a_{26}y^{(18)}(z)k^{8}+3108105a_{28}y^{(20)}(z)k^{8}+5852925a_{30}y^{(22)}(z)k^{8}+$$

$$10518300a_{32}y^{(24)}(z)k^{8}+18156204a_{34}y^{(26)}(z)k^{8}+30260340a_{36}y^{(28)}(z)k^{8}-330a_{11}y^{(4)}(z)k^{7}-1716a_{13}y^{(6)}(z)k^{7}-$$

$$6435a_{15}y^{(8)}(z)k^{7}-19448a_{17}y^{(10)}(z)k^{7}-50388a_{19}y^{(12)}(z)k^{7}-116280a_{21}y^{(14)}(z)k^{7}-245157a_{23}y^{(16)}(z)k^{7}-$$

$$480700a_{25}y^{(18)}(z)k^{7}-888030a_{27}y^{(20)}(z)k^{7}-1560780a_{29}y^{(22)}(z)k^{7}-2629575a_{31}y^{(24)}(z)k^{7}-4272048a_{33}y^{(26)}(z)k^{7}-$$

$$6724520a_{35}y^{(28)}(z)k^{7}-210a_{10}y^{(4)}(z)k^{6}-924a_{12}y^{(6)}(z)k^{6}-3003a_{14}y^{(8)}(z)k^{6}-8008a_{16}y^{(10)}(z)k^{6}-$$

$$18564a_{18}y^{(12)}(z)k^{6}-38760a_{20}y^{(14)}(z)k^{6}-74613a_{22}y^{(16)}(z)k^{6}-134596a_{24}y^{(18)}(z)k^{6}-230230a_{26}y^{(20)}(z)k^{6}-$$

$$376740a_{28}y^{(22)}(z)k^{6}-593775a_{30}y^{(24)}(z)k^{6}-906192a_{32}y^{(26)}(z)k^{6}-1344904a_{34}y^{(28)}(z)k^{6}-1947792a_{36}y^{(30)}(z)k^{6}-$$

$$126a_{9}y^{(4)}(z)k^{5} + 462a_{11}y^{(6)}(z)k^{5} + 1287a_{13}y^{(8)}(z)k^{5} + 3003a_{15}y^{(10)}(z)k^{5} + 6188a_{17}y^{(12)}(z)k^{5} +$$

$$11628a_{19}y^{(14)}(z)k^{5}+20349a_{21}y^{(16)}(z)k^{5}+33649a_{23}y^{(18)}(z)k^{5}+53130a_{25}y^{(20)}(z)k^{5}+80730a_{27}y^{(22)}(z)k^{5}+$$

$$118755a_{29}y^{(24)}(z)k^{5}+169911a_{31}y^{(26)}(z)k^{5}+237336a_{33}y^{(28)}(z)k^{5}+324632a_{35}y^{(30)}(z)k^{5}+70a_{8}y^{(4)}(z)k^{4}+$$

$$210a_{10}y^{(6)}(z)k^{4} + 495a_{12}y^{(8)}(z)k^{4} + 1001a_{14}y^{(10)}(z)k^{4} + 1820a_{16}y^{(12)}(z)k^{4} + 3060a_{18}y^{(14)}(z)k^{4} +$$

$$4845a_{20}y^{(16)}(z)k^{4}+7315a_{22}y^{(18)}(z)k^{4}+10626a_{24}y^{(20)}(z)k^{4}+14950a_{26}y^{(22)}(z)k^{4}+20475a_{28}y^{(24)}(z)k^{4}+$$

$$27405a_{30}y^{(26)}(z)k^{4}+35960a_{32}y^{(28)}(z)k^{4}+46376a_{34}y^{(30)}(z)k^{4}+58905a_{36}y^{(32)}(z)k^{4}-35a_{7}y^{(4)}(z)k^{3}-$$

$$84a_{9}y^{(6)}(z)k^{3}-165a_{11}y^{(8)}(z)k^{3}-286a_{13}y^{(10)}(z)k^{3}-455a_{15}y^{(12)}(z)k^{3}-680a_{17}y^{(14)}(z)k^{3}-969a_{19}y^{(16)}(z)k^{3}-$$

$$1330a_{21}y^{(18)}(z)k^{3}-1771a_{23}y^{(20)}(z)k^{3}-2300a_{25}y^{(22)}(z)k^{3}-2925a_{27}y^{(24)}(z)k^{3}-3654a_{29}y^{(26)}(z)k^{3}-$$

$$4495a_{31}y^{(28)}(z)k^{3}-5456a_{33}y^{(30)}(z)k^{3}-6545a_{35}y^{(32)}(z)k^{3}-15a_{6}y^{(4)}(z)k^{2}-28a_{8}y^{(6)}(z)k^{2}-45a_{10}y^{(8)}(z)k^{2}-$$

$$66a_{12}y^{(10)}(z)k^{2}-91a_{14}y^{(12)}(z)k^{2}-120a_{16}y^{(14)}(z)k^{2}-153a_{18}y^{(16)}(z)k^{2}-190a_{20}y^{(18)}(z)k^{2}-231a_{22}y^{(20)}(z)k^{2}-$$

$$276a_{24}y^{(22)}(z)k^{2} - 325a_{26}y^{(24)}(z)k^{2} - 378a_{28}y^{(26)}(z)k^{2} - 435a_{30}y^{(28)}(z)k^{2} - 496a_{32}y^{(30)}(z)k^{2} -$$

$$561a_{34}y^{(32)}(z)k^{2} - 630a_{36}y^{(34)}(z)k^{2} + 5a_{5}y^{(4)}(z)k + 7a_{7}y^{(6)}(z)k + 9a_{9}y^{(8)}(z)k + 11a_{11}y^{(10)}(z)k +$$

$$13a_{13}y^{(12)}(z)k+15a_{15}y^{(14)}(z)k+17a_{17}y^{(16)}(z)k+19a_{19}y^{(18)}(z)k+21a_{21}y^{(20)}(z)k+23a_{23}y^{(22)}(z)k+$$

$$25a_{25}y^{(24)}(z)k+27a_{27}y^{(26)}(z)k+29a_{29}y^{(28)}(z)k+31a_{31}y^{(30)}(z)k+33a_{33}y^{(32)}(z)k+35a_{35}y^{(34)}(z)k-$$

$$by(z)^{3}+(a_{36}k^{36} - a_{35}k^{35} - a_{34}k^{34} + a_{33}k^{33} + a_{32}k^{32} - a_{31}k^{31} - a_{30}k^{30} + a_{29}k^{29} + a_{28}k^{28} - a_{27}k^{27} - a_{26}k^{26} +$$

$$(a_{2} + k\,(3a_{3} + k\,(k\,(k\,(15a_{6} + k\,(21a_{7} + k\,(k\,(k\,(45a_{10} + k\,(55a_{11} + k\,(k\,(k\,(91a_{14} + k\,(105a_{15} + k\,(k\,(k\,(153a$$

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$$a_4 y^{(4)}(z) + a_6 y^{(6)}(z) + a_8 y^{(8)}(z) + a_{10} y^{(10)}(z) + a_{12} y^{(12)}(z) + a_{14} y^{(14)}(z) + a_{16} y^{(16)}(z) + a_{18} y^{(18)}(z) +$$
$$a_{20} y^{(20)}(z) + a_{22} y^{(22)}(z) + a_{24} y^{(24)}(z) + a_{26} y^{(26)}(z) + a_{28} y^{(28)}(z) + a_{30} y^{(30)}(z) + a_{32} y^{(32)}(z) +$$
$$a_{34} y^{(34)}(z) + a_{36} y^{(36)}(z) = 0$$

Constraints on coefficients from imaginary part of equation:

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

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

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

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

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

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

$a_{23} \to 24 a_{24} k + 5200 a_{26} k^3 + 1572480 a_{28} k^5 + 553737600 a_{30} k^7 + 222595276800 a_{32} k^9 + 101219098705920 a_{34} k^{11} +$ ■
$51688333334937600 a_{36} k^{13}$

$a_{21} \to 22 a_{22} k + 4048 a_{24} k^3 + 1052480 a_{26} k^5 + 322058880 a_{28} k^7 + 113541542400 a_{30} k^9 + 45647828828160 a_{32} k^{11} +$ ■
$20757378307522560 a_{34} k^{13} + 10599935211103518720 a_{36} k^{15}$

$a_{19} \to 20 a_{20} k + 3080 a_{22} k^3 + 680064 a_{24} k^5 + 178921600 a_{26} k^7 + 54813158400 a_{28} k^9 + 19326701721600 a_{30} k^{11} +$ ■
$7770141612441600 a_{32} k^{13} + 3533311737034506240 a_{34} k^{15} + 1804316572693993881600 a_{36} k^{17}$

$a_{17} \to 18 a_{18} k + 2280 a_{20} k^3 + 421344 a_{22} k^5 + 94140288 a_{24} k^7 + 24796428800 a_{26} k^9 + 7597393090560 a_{28} k^{11} +$ ■
$2678818983321600 a_{30} k^{13} + 1076998764764528640 a_{32} k^{15} + 489743069731226910720 a_{34} k^{17} + 2500915908553637$

$a_{15} \to 16 a_{16} k + 1632 a_{18} k^3 + 248064 a_{20} k^5 + 46387968 a_{22} k^7 + 10376351744 a_{24} k^9 + 2733453598720 a_{26} k^{11} +$ ■
$837515820072960 a_{28} k^{13} + 295306112919306240 a_{30} k^{15} + 118725592662115614720 a_{32} k^{17} + 5398802596242772720$
$2756945868582467011608576 0 a_{36} k^{21}$

$a_{13} \to 14 a_{14} k + 1120 a_{16} k^3 + 137088 a_{18} k^5 + 21085440 a_{20} k^7 + 3947525120 a_{22} k^9 + 883115778048 a_{24} k^{11} +$ ■
$232643283353600 a_{26} k^{13} + 71280785877073920 a_{28} k^{15} + 25133441995004313600 a_{30} k^{17} + 1010471074163085803$
$4594909780970778352680960 a_{34} k^{21} + 2346430956531614743737139200 a_{36} k^{23}$

$a_{11} \to 12 a_{12} k + 728 a_{14} k^3 + 69888 a_{16} k^5 + 8656128 a_{18} k^7 + 1332930560 a_{20} k^9 + 249576198144 a_{22} k^{11} +$
$55834388004864 a_{24} k^{13} + 14708733593681920 a_{26} k^{15} + 4506686150828359680 a_{28} k^{17} + 158904725372420751360 0$
$63886446152534886187008 0 a_{32} k^{21} + 29051049938010468255793152 0 a_{34} k^{23} + 14835173299443604389797403 03$

$a_9 \to 10 a_{10} k + 440 a_{12} k^3 + 32032 a_{14} k^5 + 3111680 a_{16} k^7 + 385848320 a_{18} k^9 + 59422904320 a_{20} k^{11} +$
$11126417899520 a_{22} k^{13} + 2489170300469248 a_{24} k^{15} + 655734757395660800 a_{26} k^{17} + 200914020585819340800 a_{28}$
$7084182537075441008640 0 a_{30} k^{21} + 28481421507853400250777600 a_{32} k^{23} + 12951341769355527641886621696 a$
$6613716200248545320032702300160 a_{36} k^{27}$

$a_7 \to 240 a_{10} k^3 + 12672 a_{12} k^5 + 933504 a_{14} k^7 + 90787840 a_{16} k^9 + 11259076608 a_{18} k^{11} + 1733987205120 a_{20} k^{13} +$ ■
$324674387017728 a_{22} k^{15} + 72635234665365504 a_{24} k^{17} + 19134668627220889600 a_{26} k^{19} + 5862771754821054627 8$
$20671999481506500182016 00 a_{30} k^{23} + 8311021456270926829018152 96 a_{32} k^{25} + 37792664001420258971615441 7$

$1929915514608944237093118069964 80a_{36}k^{29} + 8a_8 k$

$a_5 \rightarrow 4032a_{10}k^5 + 215424a_{12}k^7 + 15887872a_{14}k^9 + 1545363456a_{16}k^{11} + 191651217408a_{18}k^{13} +$

$29515853365248a_{20}k^{15}+5526593941929984a_{22}k^{17}+1236393972835811328a_{24}k^{19}+325709541934503034880a_{2}$

$99795859565893449154560a_{28}k^{23}+35187792455985778913181696a_{30}k^{25}+14146986524595818866380111872a$

$6433051715363147456977060233216a_{34}k^{29}+3285094247734131823302026528292864a_{36}k^{31}+6a_6k+\blacksquare$

$112a_8k^3$

$a_3 \rightarrow 32640a_{10}k^7+1745920a_{12}k^9+128780288a_{14}k^{11}+12526223360a_{16}k^{13}+1553465966592a_{18}k^{15}+\blacksquare$

$239246490992640a_{20}k^{17}+44796883073761280a_{22}k^{19}+10021832059523170304a_{24}k^{21}+2640102104917816115 2$

$80891476910312135 4326016a_{28}k^{25}+2852215025120124771 44760320a_{30}k^{27}+1146711535715356052937087385$

$5214435313863701306 8286135369728a_{34}k^{31} + 26627971004564581137636218728611840a_{36}k^{33} +$

$4a_4k + 40a_6k^3 + 896a_8k^5$

$C0 \rightarrow a_1 - 79360a_{10}k^9 - 4245504a_{12}k^{11} - 313155584a_{14}k^{13} - 30460116992a_{16}k^{15} - 3777576173568a_{18}k^{17} - \blacksquare$

$2a_2k - 581777702256640a_{20}k^{19} - 108932957168730112a_{22}k^{21} - 24370173276164456448a_{24}k^{23} -$

$6419958484945407574016a_{26}k^{25} - 1967044844910430876860416a_{28}k^{27} - 693575525634287935244206080a_{30}k^{2}$

$278846808228005417477465964544a_{32}k^{31} - 126799861926498005417315327279104a_{34}k^{33} - 6475146096423199$

$8a_4k^3 - 96a_6k^5 - 2176a_8k^7$

Constraints on coefficients from real part of equation:

$b \rightarrow \frac{12018651620450962379065929102782543261054533632000000000a_{36}\chi^{18}}{A^2}$

$a_{34} \rightarrow -630a_{36}k^2 - 23988a_{36}$

$a_{32} \rightarrow 58905a_{36}k^4 + 13457268a_{36}k^2 + 266897280a_{36}$

$a_{30} \rightarrow -1947792a_{36}k^6 - 1112467488a_{36}k^4 - 132381050880a_{36}k^2 - 1829130633472a_{36}$

$a_{28} \rightarrow 30260340a_{36}k^8 + 32261557152a_{36}k^6 + 9597626188800a_{36}k^4 + 795671825560320a_{36}k^2 +$

$8647729139879424a_{36}$

$a_{26} \rightarrow -254186856a_{36}k^{10} - 435531021552a_{36}k^8 - 241860179957760a_{36}k^6 - 50127325010300160a_{36}k^4 - \blacksquare$

$3268841614874422272a_{36}k^2 - 29933436081188689920a_{36}$

$a_{24} \rightarrow 1251677700a_{36}k^{12}+3145501822320a_{36}k^{10}+2807305660224000a_{36}k^8+1086092041889836800a_{36}k^6+\blacksquare$

$177062254139031206400a_{36}k^4 + 9728366726386324224000a_{36}k^2 + 78569552955302676971520a_{36}$

$a_{22} \rightarrow -3796297200a_{36}k^{14} - 13153916711520a_{36}k^{12} - 17218141382707200a_{36}k^{10} - 10705764412914105600a_{36}k$

$3257945476158174197760a_{36}k^6 - 447504869413770914304000a_{36}k^4 - 21685196615663538844139520a_{36}k^2 - \blacksquare$

$1598025852471172526220 90240a_{36}$

$a_{20} \rightarrow 7307872110a_{36}k^{16}+33390711652320a_{36}k^{14}+60263494839475200a_{36}k^{12}+54956257319625742080a_{36}k^{10}$

$268780501783049371315 20a_{36}k^8+6891574988972072080281600a_{36}k^6+83488006970304624549937 1520a_{36}k^4 - \blacksquare$

$3691439719208408535570 2845440a_{36}k^2 + 25515150403100872601 6088145920a_{36}$

$a_{18} \rightarrow -9075135300a_{36}k^{18} - 52868626782840a_{36}k^{16} - 125824879335168000a_{36}k^{14} - 158207407435286227200a_{3}$

$11348510075284306788640a_{36}k^{10}-46764258853739060544768000a_{36}k^8-1057514754957191910965870592\ldots$

$11689559110826627029305901056 00a_{36}k^4-48478785765891657943056747724800a_{36}k^2-32199612064230172\ldots$

$a_{16} \to 7307872110a_{36}k^{20}+52868626782840a_{36}k^{18}+160426721152339200a_{36}k^{16}+265997069643942777600a_{36}k^{\ldots}$

$26307909719977256646912 0a_{36}k^{12}+15899848010271280585221120 0a_{36}k^{10}+577856276815894151349207859\ldots$

$11923350293043159569892019077120a_{36}k^6+1236209037030237277547947066982400a_{36}k^4+492654064582 72\ldots$

$321724106696202377965158439304822784a_{36}$

$a_{14} \to -3796297200a_{36}k^{22}-33390711652320a_{36}k^{20}-125824879335168000a_{36}k^{18}-265997069643942777600a_{3\ldots}$

$34691749081288690083840 0a_{36}k^{14}-28908814564129601064038400 0a_{36}k^{12}-1540950071509051070264554291\ldots$

$51100072684470683870965796044800a_{36}k^8-9889672296241898220383576535859200a_{36}k^6-985308129165 44\ldots$

$38606892803544285355819012716578734080a_{36}k^2-253731031937834561675053092557209731072a_{36}$ ▮

$a_{12} \to 1251677700a_{36}k^{24}+13153916711520a_{36}k^{22}+60263494839475200a_{36}k^{20}+158207407435286227200a_{36}k^{\ldots}$

$26307909719977256646912 0a_{36}k^{16}+28908814564129601064038400 0a_{36}k^{14}+2124643280413994657485976371\ldots$

$103335702539707382939064165335040a_{36}k^{10} + 3214143496278616921624662374154240 0a_{36}k^8 +$

$5977535983603689281935916221967892480a_{36}k^6+5855378741870883278965883595347774668 80a_{36}k^4+$ ▮

$23089523906342945112429831422706085527552a_{36}k^2+1566706930448254799158998354599893113241 60a_{36}$ ▮

$a_{10} \to -254186856a_{36}k^{26}-3145501822320a_{36}k^{24}-17218141382707200a_{36}k^{22}-54956257319625742080a_{36}k^{20}-$

$11348510075284306788640a_{36}k^{18}-15899848010271280585221120 0a_{36}k^{16}-1540950071509051070264554291\ldots$

$103335702539707382939064165335040a_{36}k^{12} - 4714077127875304818382838148759552 0a_{36}k^{10} -$

$1408990624706583902170608823749574656 0a_{36}k^8-25763666464231886427449887819530208542 72a_{36}k^6-$ ▮

$25398476296977239623672814564976694080307 2a_{36}k^4-10340265740958481674449389140359294547394560\ldots$

$746615758819150691064601333602163218 06041088a_{36}$

$a_8 \to 30260340a_{36}k^{28}+435531021552a_{36}k^{26}+2807305660224000a_{36}k^{24}+10705764412914105600a_{36}k^{22}+$ ▮

$2687805017830493713152 0a_{36}k^{20}+46764258853739060544768000a_{36}k^{18}+57785627681589415134920785920a_{\ldots}$

$51100072684470683870965796044800a_{36}k^{14} + 321414349627861692162466237415424 00a_{36}k^{12} +$

$1408990624706583902170608823749574656 0a_{36}k^{10}+4140589253180124604411589113853069230080a_{36}k^8+$ ▮

$7619542889093171887101844369493008224092 16a_{36}k^6+7755199305718861255837041855269470910545920 0\ldots$

$33597709146861781097907060012097344812718489 60a_{36}k^2+2683753222518015514828335759334817172117\ldots$

$a_6 \to -1947792a_{36}k^{30}-32261557152a_{36}k^{28}-241860179957760a_{36}k^{26}-1086092041889836800a_{36}k^{24}-$ ▮

$325794547615817419776 0a_{36}k^{22}-6891574988972072080281600a_{36}k^{20}-1057514754957191910965870592 0a_{36\ldots}$

$11923350293043159569892019077120a_{36}k^{16}-988967229624189822038357653585920 0a_{36}k^{14}-597753598360 3\ldots$

$2576366646423188642744988781953020854272a_{36}k^{10}-7619542889093171887101844369493008224092 16a_{36}k^{\ldots}$

$14476372037341874344229144796503012366352384 0a_{36}k^6-156789309352021645123566280056454275792 68\ldots$

$7514509023050443441519340126137488081927882672 08a_{36}k^2-7016410160699192045938829729859073354\ldots$

$a_4 \to 58905a_{36}k^{32} + 1112467488a_{36}k^{30} + 9597626188800a_{36}k^{28} + 50127325010300160a_{36}k^{26} +$

$17706225413903120640 0 a_{36}k^{24} + 4475048694137709143040 00 a_{36}k^{22} + 834880069703046245499371520 a_{36}k^{20} +$

$11689559110826627029305901056 00 a_{36}k^{18} + 123620903703023727754794706698240 0 a_{36}k^{16} + 98530812916544$

$585537874187088327896588359534777466880 a_{36}k^{12} + 253984762969772396236728145649766940803072 a_{36}k^{1}$

$7755199305718861255837041855269470910545920 0 a_{36}k^{8} + 156789309352021645123566280056454275792686$

$187862755762610860379835031534372020481970667520 a_{36}k^{4} + 1052461524104878806890824459478861003$

$125551243307150871046606403366326176346363920384000 0 a_{36}$

$a_2 \rightarrow -630 a_{36}k^{34} - 13457268 a_{36}k^{32} - 132381050880 a_{36}k^{30} - 795671825560320 a_{36}k^{28} - 3268841614874422272 a$

$9728366726386324224000 a_{36}k^{24} - 21685196615663538844139520 a_{36}k^{22} - 369143971920840853557028454 40 a_{3}$

$484787857658916579430567477248 00 a_{36}k^{18} - 49265406458272164411559749082152960 a_{36}k^{16} -$

$386068928035442853558190127165787340 80 a_{36}k^{14} - 23089523906342945112429831422706085527552 a_{36}k^{12} -$

$103402657409584816744493891403592945473945 60 a_{36}k^{10} - 3359770914686178109790706001209734481271 84$

$751450902305044344151934012613748808192788267008 a_{36}k^{6} - 1052461524104878806890824459478861003 1$

$75330745984290522627963842019795705807818352230400 00 a_{36}k^{2} - 1371242870960140362333684132417783$

$\omega \rightarrow -a_1 k - 35 a_{36}k^{36} - 791604 a_{36}k^{34} - 8273815680 a_{36}k^{32} - 53044788370688 a_{36}k^{30} - 233488686776744448 a_{36}k^{2}$

$748335902029717248000 a_{36}k^{26} - 180709971797196157034496 0 a_{36}k^{24} - 3355854290189462305063895040 a_{36}k^{2}$

$484787857658916579430567477248 0 a_{36}k^{20} - 5473934050919129379062194342461440 a_{36}k^{18} - 4825861600443 0$

$3298503415191849301775690203243726503936 a_{36}k^{14} - 172337762349308027907489819005988242456576 0 a_{3}$

$6719541829372356219581412002419468962543 69792 a_{36}k^{10} - 187862755762610860379835031534372020481 9$

$350820508034959602296941486492953667732997406720 00 a_{36}k^{6} - 37665372992145261313981921009897852 9$

$1371242870960140362333684132417783449842467471360 00000 a_{36}k^{2} + 6875065666466579152549571346339 5$

y(z) - function:

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

u(x, t) - function:

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