

(* Defina a sequência seq2 *)

seq2 =

{149,569,989,1409,1829,2249,2669,3089,3509,3929,4349,4769,5189,5609,6029,6449,6869,7289,7709,8129,8549,8969,9389,9809,10229,10649,11069,11489,11909,12329,12749,13169,13589,14009,14429,14849,15269,15689,16109,16529,16949,17369,17789,18209,18629,19049,19469,19889,20309,20729,21149,21569,21989,22409,22829,23249,23669,24089,24509,24929,25349,25769,26189,26609,27029,27449,27869,28289,28709,29129,29549,29969,30389,30809,31229,31649,32069,32489,32909,33329,33749,34169,34589,35009,35429,35849,36269,36689,37109,37529,37949,38369,38789,39209,39629,40049,40469,40889,41309,41729,42149,42569,42989,43409,43829,44249,44669,45089,45509,45929,46349,46769,47189,47609,48029,48449,48869,49289,49709,50129,50549,50969,51389,51809,52229,52649,53069,53489,53909,54329,54749,55169,55589,56009,56429,56849,57269,57689,58109,58529,58949,59369,59789,60209,60629,61049,61469,61889,62309,62729,63149,63569,63989,64409,64829,65249,65669,66089,66509,66929,67349,67769,68189,68609,69029,69449,69869,70289,70709,71129,71549,71969,72389,72809,73229,73649,74069,74489,74909,75329,75749,76169,76589,77009,77429,77849,78269,78689,79109,79529,79949,80369,80789,81209,81629,82049,82469,82889,83309,83729,84149,84569,84989,85409,85829,86249,86669,87089,87509,87929,88349,88769,89189,89609,90029,90449,90869,91289,91709,92129,92549,92969,93389,93809,94229,94649,95069,95489,95909,96329,96749,97169,97589,98009,98429,98849,99269,99689,100109,100529,100949,101369,101789,102209,102629,103049,103469,103889,104309,104729}

(* Defina seq1 como uma variável simbólica *)

Clear[x];

seq1 = Array[x, Length[seq2]];

(* Calcular a diferença entre seq2 e seq1 *)

b = seq2 - seq1;

(* Calcular Mod[seq2, seq1] *)

c = Mod[seq2, seq1];

(* Calcular Mod[b, seq1] *)

d = Mod[b, seq1];

(* Resolver a equação c == d para encontrar os valores de seq1 *)

sol = FindInstance[c == d, seq1];

(* Mostrar os resultados *)

$$\text{Sol}=\text{seq2} = \{ \{x[1] \rightarrow 171/10 - (103 \text{ I})/5, x[2] \rightarrow 64/5 + \text{I}/10, x[3] \rightarrow 92/5 + (89 \text{ I})/5, x[4] \rightarrow 69/5 - \text{I}/5, x[5] \rightarrow 17/2 + (23 \text{ I})/10, x[6] \rightarrow -(181/10) + (114 \text{ I})/5, x[7] \rightarrow 7/2 + (43 \text{ I})/5, x[8] \rightarrow 19/2 - (63 \text{ I})/10, x[9] \rightarrow -(157/10) + (207 \text{ I})/10, x[10] \rightarrow 16/5 - (217 \text{ I})/10, x[11] \rightarrow -(4/5) + (79 \text{ I})/5, x[12] \rightarrow 18/5 + 10 \text{ I}, x[13] \rightarrow -(35/2) - (23 \text{ I})/10, x[14] \rightarrow 213/10 - (49 \text{ I})/5, x[15] \rightarrow -(102/5) + (89 \text{ I})/10, x[16] \rightarrow -(29/2) - (5 \text{ I})/2, x[17] \rightarrow -(43/10) + (77 \text{ I})/5, x[18] \rightarrow 161/10 - (41 \text{ I})/5, x[19] \rightarrow -18 + (39 \text{ I})/2, x[20] \rightarrow -10 + (79 \text{ I})/10, x[21] \rightarrow 58/5 - (23 \text{ I})/10, x[22] \rightarrow -(17/5) - 6 \text{ I}, x[23] \rightarrow -(83/5) - (74 \text{ I})/5, x[24] \rightarrow -(8/5) + (7 \text{ I})/2, x[25] \rightarrow 39/10 + (247 \text{ I})/10, x[26] \rightarrow 11/2 + 23 \text{ I}, x[27] \rightarrow 29/5 - (28 \text{ I})/5, x[28] \rightarrow 67/10 - (29 \text{ I})/2, x[29] \rightarrow 173/10 + (39 \text{ I})/5, x[30] \rightarrow -(231/10), x[31] \rightarrow -(169/10) - (118 \text{ I})/5, x[32] \rightarrow 27/2 + 12 \text{ I}, x[33] \rightarrow 99/5 + (36 \text{ I})/5, x[34] \rightarrow -(3/5) + (109 \text{ I})/10, x[35] \rightarrow 27/5 - (231 \text{ I})/10, x[36] \rightarrow -(13/10) + (3 \text{ I})/5, x[37] \rightarrow -(82/5) - (123 \text{ I})/5, x[38] \rightarrow -(41/2) + (111 \text{ I})/5, x[39] \rightarrow -(37/2) + (117 \text{ I})/10, x[40] \rightarrow -(153/10) - (177 \text{ I})/10, x[41] \rightarrow -20 + (19 \text{ I})/5, x[42] \rightarrow -(58/5) - (107 \text{ I})/5, x[43] \rightarrow 3/2 + (98 \text{ I})/5, x[44] \rightarrow 38/5 + (47 \text{ I})/10, x[45] \rightarrow 26/5 + (89 \text{ I})/10, x[46] \rightarrow 76/5 + 14 \text{ I}, x[47] \rightarrow -(43/5) + (117 \text{ I})/5, x[48] \rightarrow 41/5 - (249 \text{ I})/10, x[49] \rightarrow -(7/2) + (217 \text{ I})/10, x[50] \rightarrow -(8/5) + (231 \text{ I})/10, x[51] \rightarrow 193/10 - (103 \text{ I})/5, x[52] \rightarrow -(9/5) - (103 \text{ I})/5, x[53] \rightarrow -(48/5) - (33 \text{ I})/5, x[54] \rightarrow -(62/5) + (153 \text{ I})/10, x[55] \rightarrow 21/10 + (53 \text{ I})/5, x[56] \rightarrow -(81/10) + (33 \text{ I})/5, x[57] \rightarrow -(112/5) + (53 \text{ I})/5, x[58] \rightarrow -(86/5) - 21 \text{ I}, x[59] \rightarrow -(57/10) + (39 \text{ I})/2, x[60] \rightarrow -(91/5) - (217 \text{ I})/10, x[61] \rightarrow 14 + (241 \text{ I})/10, x[62] \rightarrow 207/10 - (229 \text{ I})/10, x[63] \rightarrow -22 + (29 \text{ I})/5, x[64] \rightarrow 93/5 - (53 \text{ I})/10, x[65] \rightarrow -3 - (221 \text{ I})/10, x[66] \rightarrow 2/5 + (239 \text{ I})/10, x[67] \rightarrow -(57/5) - (81 \text{ I})/5, x[68] \rightarrow 99/10 + (149 \text{ I})/10, x[69] \rightarrow 77/10 + (45 \text{ I})/2, x[70] \rightarrow -(129/10) + (97 \text{ I})/10, x[71] \rightarrow -(213/10) - (163 \text{ I})/10, x[72] \rightarrow -(99/5) + (31 \text{ I})/5, x[73] \rightarrow -(52/5) - (241 \text{ I})/10, x[74] \rightarrow -(59/10) + (66 \text{ I})/5, x[75] \rightarrow 27/2 + 14 \text{ I}, x[76] \rightarrow -(61/10) + (12 \text{ I})/5, x[77] \rightarrow -20 - 3 \text{ I}, x[78] \rightarrow 181/10 - (7 \text{ I})/10, x[79] \rightarrow 66/5 + (61 \text{ I})/5, x[80] \rightarrow 11/5 - (41 \text{ I})/5, x[81] \rightarrow -(51/5) - (79 \text{ I})/5, x[82] \rightarrow 9/10 - (23 \text{ I})/2, x[83] \rightarrow -(149/10) - (69 \text{ I})/10, x[84] \rightarrow 23 - (239 \text{ I})/10, x[85] \rightarrow 61/5 + (46 \text{ I})/5, x[86] \rightarrow -(143/10) + (68 \text{ I})/5, x[87] \rightarrow 4 + (41 \text{ I})/2, x[88] \rightarrow 177/10 + (79 \text{ I})/10, x[89] \rightarrow -(23/5) + (73 \text{ I})/5, x[90] \rightarrow 229/10 + (47 \text{ I})/5, x[91] \rightarrow 7/10 + 12 \text{ I}, x[92] \rightarrow 121/10 + 19 \text{ I}, x[93] \rightarrow 237/10 - (27 \text{ I})/5, x[94] \rightarrow 91/10 + \text{I}/5, x[95] \rightarrow -(79/10) - (143 \text{ I})/10, x[96] \rightarrow 45/2 + (169 \text{ I})/10, x[97] \rightarrow -(68/5) - (93 \text{ I})/5, x[98] \rightarrow -(124/5) - 12 \text{ I}, x[99] \rightarrow 137/10 - (7 \text{ I})/10, x[100] \rightarrow 27/10 + (119 \text{ I})/10, x[101] \rightarrow 241/10 - (53 \text{ I})/10, x[102] \rightarrow 23/5 - (213 \text{ I})/10, x[103] \rightarrow -25 + 6 \text{ I}, x[104] \rightarrow 11 + (57 \text{ I})/10, x[105] \rightarrow 16 - (197 \text{ I})/10, x[106] \rightarrow 28/5 + (109 \text{ I})/5, x[107] \rightarrow -(19/10) - (53 \text{ I})/10, x[108] \rightarrow -(37/5) + (93 \text{ I})/10, x[109] \rightarrow 21/10 - (33 \text{ I})/5, x[110] \rightarrow 33/2 + (199 \text{ I})/10, x[111] \rightarrow 119/5 + 7 \text{ I}, x[112] \rightarrow 39/10 + (101 \text{ I})/5, x[113] \rightarrow 45/2 + (123 \text{ I})/5, x[114] \rightarrow -(35/2) + (97 \text{ I})/10, x[115] \rightarrow -(13/5) + (147 \text{ I})/10, x[116] \rightarrow -25 + (37 \text{ I})/10, x[117] \rightarrow -(26/5) + (79 \text{ I})/5, x[118] \rightarrow -22 + 18 \text{ I}, x[119] \rightarrow -20 - 20 \text{ I}, x[120] \rightarrow -(17/2) + (159 \text{ I})/10, x[121] \rightarrow 67/10 - (68 \text{ I})/5, x[122] \rightarrow 77/5 + 22 \text{ I}, x[123] \rightarrow -(46/5) + (98 \text{ I})/5, x[124] \rightarrow 78/5 - (109 \text{ I})/5, x[125] \rightarrow -(61/10) - 24 \text{ I}, x[126] \rightarrow 121/5 - (21 \text{ I})/2, x[127] \rightarrow 187/10 + (203 \text{ I})/10, x[128] \rightarrow 157/10 + (68 \text{ I})/5, x[129] \rightarrow 59/10 - (51 \text{ I})/5, x[130] \rightarrow -(19/5) + (47 \text{ I})/10, x[131] \rightarrow -(191/10) - (189 \text{ I})/10, x[132] \rightarrow 28/5 + (76 \text{ I})/5, x[133] \rightarrow -(39/2) + (249 \text{ I})/10, x[134] \rightarrow 57/10 - (72 \text{ I})/5, x[135] \rightarrow -16 - (82 \text{ I})/5, x[136] \rightarrow -(109/10) + (23 \text{ I})/10, x[137] \rightarrow -(21/2) + (3 \text{ I})/5, x[138] \rightarrow -(117/5) + (163 \text{ I})/10, x[139] \rightarrow 16/5 - (122 \text{ I})/5, x[140] \rightarrow -(229/10) + 18 \text{ I}, x[141] \rightarrow 48/5 + (89 \text{ I})/10, x[142] \rightarrow -(119/10) - \text{I}/5, x[143] \rightarrow 17/5 - (23 \text{ I})/10, x[144] \rightarrow 34/5 + (106 \text{ I})/5, x[145] \rightarrow 131/10 - (121 \text{ I})/5, x[146] \rightarrow -14 + (221 \text{ I})/10, x[147] \rightarrow 129/10 + (37 \text{ I})/10, x[148] \rightarrow -(61/5) - (67 \text{ I})/5, x[149] \rightarrow -(25/2) + (17 \text{ I})/2, x[150] \rightarrow 41/10 + (41 \text{ I})/10, x[151] \rightarrow 51/5 + 23 \text{ I}, x[152] \rightarrow -(137/10) - (209 \text{ I})/10, x[153] \rightarrow -14 - (39 \text{ I})/10, x[154] \rightarrow 2/5 + (231 \text{ I})/10, x[155] \rightarrow 42/5 - (48 \text{ I})/5, x[156] \rightarrow -(247/10) - (33 \text{ I})/10, x[157] \rightarrow 58/5 + (93 \text{ I})/5, x[158] \rightarrow -(62/5) + (219 \text{ I})/10, x[159] \rightarrow 94/5 - (113 \text{ I})/10, x[160] \rightarrow 77/10 - (113 \text{ I})/10, x[161] \rightarrow -(116/5) + (241 \text{ I})/10, x[162] \rightarrow 77/10 - (96 \text{ I})/5, x[163] \rightarrow 81/5 - (41 \text{ I})/2, x[164] \rightarrow -(34/5) + (189 \text{ I})/10, x[165] \rightarrow -(49/2) + (51 \text{ I})/10, x[166] \rightarrow -(89/5) + (6 \text{ I})/5, x[167] \rightarrow -(47/5) + (3 \text{ I})/2, x[168] \rightarrow -24 - (31 \text{ I})/10, x[169] \rightarrow 41/10 + (27 \text{ I})/5, x[170] \rightarrow -(49/10) - (72 \text{ I})/5, x[171] \rightarrow 209/10 - (84 \text{ I})/5, x[172] \rightarrow -(219/10) + (33 \text{ I})/10, x[173] \rightarrow 11/10 + (69 \text{ I})/10, x[174] \rightarrow -(63/5) - \text{I}/2, x[175] \rightarrow -(207/10) + (219 \text{ I})/10, x[176] \rightarrow 237/10 - (14 \text{ I})/5, x[177] \rightarrow 9/2 + (74 \text{ I})/5, x[178] \rightarrow -(113/5) + (43 \text{ I})/2, x[179] \rightarrow -(249/10) + (83 \text{ I})/10, x[180] \rightarrow 217/10 + (177 \text{ I})/10, x[181] \rightarrow 9/5 - (39 \text{ I})/5, x[182] \rightarrow -(86/5) + (96 \text{ I})/5, x[183] \rightarrow 46/5 + (199 \text{ I})/10, x[184] \rightarrow -(58/5) - (153 \text{ I})/10, x[185] \rightarrow 117/10 + (19 \text{ I})/2, x[186] \rightarrow -(229/10) - (47$$

$$\begin{aligned}
 &I/10, x[187] \rightarrow 3 - (35 I)/2, x[188] \rightarrow -(122/5) + (97 I)/5, x[189] \rightarrow 179/10 - (23 I)/5, x[190] \rightarrow 7/5 + (3 \\
 &I)/10, x[191] \rightarrow 99/10 - (209 I)/10, x[192] \rightarrow -(139/10) + (92 I)/5, x[193] \rightarrow 237/10 + (9 I)/2, x[194] \rightarrow - \\
 &(66/5) - (123 I)/10, x[195] \rightarrow 52/5 + 9 I, x[196] \rightarrow 117/10 + (44 I)/5, x[197] \rightarrow -9 + (27 I)/5, x[198] \rightarrow \\
 &> 12/5 + (45 I)/2, x[199] \rightarrow 153/10 + (89 I)/5, x[200] \rightarrow 247/10 + (191 I)/10, x[201] \rightarrow -(49/10) + (49 \\
 &I)/10, x[202] \rightarrow 25/2 + (79 I)/5, x[203] \rightarrow 4/5 - (56 I)/5, x[204] \rightarrow -(87/10) + (109 I)/10, x[205] \rightarrow \\
 &> 223/10 + (71 I)/5, x[206] \rightarrow -10 + (46 I)/5, x[207] \rightarrow -(231/10) - 24 I, x[208] \rightarrow -(221/10) - (49 I)/5, x[209] \rightarrow \\
 &> 119/5 - (27 I)/5, x[210] \rightarrow 127/10 - (153 I)/10, x[211] \rightarrow 1 - (15 I)/2, x[212] \rightarrow 49/5 + (101 I)/10, x[213] \rightarrow - \\
 &(25/2) - 18 I, x[214] \rightarrow 76/5 - (151 I)/10, x[215] \rightarrow 3/2 + 18 I, x[216] \rightarrow -(91/10) + (193 I)/10, x[217] \rightarrow - \\
 &> 177/10 + (247 I)/10, x[218] \rightarrow -(14/5) - (19 I)/5, x[219] \rightarrow -(19/10) - (153 I)/10, x[220] \rightarrow -(82/5) - (113 \\
 &I)/5, x[221] \rightarrow -(52/5) - (167 I)/10, x[222] \rightarrow -(71/10) - (12 I)/5, x[223] \rightarrow 101/10 + (27 I)/10, x[224] \rightarrow - \\
 &> 47/5 - (104 I)/5, x[225] \rightarrow -(9/2) + (101 I)/10, x[226] \rightarrow 191/10 - (23 I)/10, x[227] \rightarrow -(58/5) - (17 \\
 &I)/5, x[228] \rightarrow 35/2 + (183 I)/10, x[229] \rightarrow -8 + (161 I)/10, x[230] \rightarrow 108/5 + I/2, x[231] \rightarrow -(21/2) - (19 \\
 &I)/2, x[232] \rightarrow -(81/10) - (31 I)/5, x[233] \rightarrow -(11/5) - (207 I)/10, x[234] \rightarrow 21/10 + (233 I)/10, x[235] \rightarrow - \\
 &(123/5) + (51 I)/5, x[236] \rightarrow 64/5 - (31 I)/10, x[237] \rightarrow 5/2 - (249 I)/10, x[238] \rightarrow 229/10 + (7 I)/5, x[239] \rightarrow - \\
 &> 74/5 + (52 I)/5, x[240] \rightarrow -(197/10) + (41 I)/2, x[241] \rightarrow -(23/2) - (68 I)/5, x[242] \rightarrow -(207/10) + (16 \\
 &I)/5, x[243] \rightarrow -(21/2) + (197 I)/10, x[244] \rightarrow -(37/10) + 19 I, x[245] \rightarrow -(241/10) + 12 I, x[246] \rightarrow -20 + 9 \\
 &I, x[247] \rightarrow 83/10 - (34 I)/5, x[248] \rightarrow -(11/2) - 18 I, x[249] \rightarrow -(11/5) + (14 I)/5, x[250] \rightarrow 39/10 + (11 I)/2;
 \end{aligned}$$

$$\begin{aligned}
 &\{ \{ 171/10 - (103 I)/5, 64/5 + I/10, 92/5 + (89 I)/5, 69/5 - I/5, 17/2 + (23 I)/10, -(181/10) + (114 I)/5, 7/2 + (43 \\
 &I)/5, 19/2 - (63 I)/10, -(157/10) + (207 I)/10, 16/5 - (217 I)/10, -(4/5) + (79 I)/5, 18/5 + 10 I, -(35/2) - (23 \\
 &I)/10, 213/10 - (49 I)/5, -(102/5) + (89 I)/10, -(29/2) - (5 I)/2, -(43/10) + (77 I)/5, 161/10 - (41 I)/5, - \\
 &18 + (39 I)/2, -10 + (79 I)/10, 58/5 - (23 I)/10, -(17/5) - 6 I, -(83/5) - (74 I)/5, -(8/5) + (7 I)/2, 39/10 + (247 \\
 &I)/10, 11/2 + 23 I, 29/5 - (28 I)/5, 67/10 - (29 I)/2, 173/10 + (39 I)/5, -(231/10), -(169/10) - (118 \\
 &I)/5, 27/2 + 12 I, 99/5 + (36 I)/5, -(3/5) + (109 I)/10, 27/5 - (231 I)/10, -(13/10) + (3 I)/5, -(82/5) - (123 \\
 &I)/5, -(41/2) + (111 I)/5, -(37/2) + (117 I)/10, -(153/10) - (177 I)/10, -20 + (19 I)/5, -(58/5) - (107 \\
 &I)/5, 3/2 + (98 I)/5, 38/5 + (47 I)/10, 26/5 + (89 I)/10, 76/5 + 14 I, -(43/5) + (117 I)/5, 41/5 - (249 I)/10, - \\
 &(7/2) + (217 I)/10, -(8/5) + (231 I)/10, 193/10 - (103 I)/5, -(9/5) - (103 I)/5, -(48/5) - (33 I)/5, - \\
 &(62/5) + (153 I)/10, 21/10 + (53 I)/5, -(81/10) + (33 I)/5, -(112/5) + (53 I)/5, -(86/5) - 21 I, -(57/10) + (39 \\
 &I)/2, -(91/5) - (217 I)/10, 14 + (241 I)/10, 207/10 - (229 I)/10, -22 + (29 I)/5, 93/5 - (53 I)/10, -3 - (221 \\
 &I)/10, 2/5 + (239 I)/10, -(57/5) - (81 I)/5, 99/10 + (149 I)/10, 77/10 + (45 I)/2, -(129/10) + (97 I)/10, - \\
 &(213/10) - (163 I)/10, -(99/5) + (31 I)/5, -(52/5) - (241 I)/10, -(59/10) + (66 I)/5, 27/2 + 14 I, -(61/10) + (12 \\
 &I)/5, -20 - 3 I, 181/10 - (7 I)/10, 66/5 + (61 I)/5, 11/5 - (41 I)/5, -(51/5) - (79 I)/5, 9/10 - (23 I)/2, -(149/10) - \\
 &(69 I)/10, 23 - (239 I)/10, 61/5 + (46 I)/5, -(143/10) + (68 I)/5, 4 + (41 I)/2, 177/10 + (79 I)/10, -(23/5) + (73 \\
 &I)/5, 229/10 + (47 I)/5, 7/10 + 12 I, 121/10 + 19 I, 237/10 - (27 I)/5, 91/10 + I/5, -(79/10) - (143 \\
 &I)/10, 45/2 + (169 I)/10, -(68/5) - (93 I)/5, -(124/5) - 12 I, 137/10 - (7 I)/10, 27/10 + (119 I)/10, 241/10 - \\
 &(53 I)/10, 23/5 - (213 I)/10, -25 + 6 I, 11 + (57 I)/10, 16 - (197 I)/10, 28/5 + (109 I)/5, -(19/10) - (53 I)/10, - \\
 &(37/5) + (93 I)/10, 21/10 - (33 I)/5, 33/2 + (199 I)/10, 119/5 + 7 I, 39/10 + (101 I)/5, 45/2 + (123 I)/5, - \\
 &(35/2) + (97 I)/10, -(13/5) + (147 I)/10, -25 + (37 I)/10, -(26/5) + (79 I)/5, -22 + 18 I, -20 - 20 I, -(17/2) + (159 \\
 &I)/10, 67/10 - (68 I)/5, 77/5 + 22 I, -(46/5) + (98 I)/5, 78/5 - (109 I)/5, -(61/10) - 24 I, 121/5 - (21 \\
 &I)/2, 187/10 + (203 I)/10, 157/10 + (68 I)/5, 59/10 - (51 I)/5, -(19/5) + (47 I)/10, -(191/10) - (189 \\
 &I)/10, 28/5 + (76 I)/5, -(39/2) + (249 I)/10, 57/10 - (72 I)/5, -16 - (82 I)/5, -(109/10) + (23 I)/10, -(21/2) + (3 \\
 &I)/5, -(117/5) + (163 I)/10, 16/5 - (122 I)/5, -(229/10) + 18 I, 48/5 + (89 I)/10, -(119/10) - I/5, 17/5 - (23 \\
 &I)/10, 34/5 + (106 I)/5, 131/10 - (121 I)/5, -14 + (221 I)/10, 129/10 + (37 I)/10, -(61/5) - (67 I)/5, - \\
 &(25/2) + (17 I)/2, 41/10 + (41 I)/10, 51/5 + 23 I, -(137/10) - (209 I)/10, -14 - (39 I)/10, 2/5 + (231 \\
 &I)/10, 42/5 - (48 I)/5, -(247/10) - (33 I)/10, 58/5 + (93 I)/5, -(62/5) + (219 I)/10, 94/5 - (113 I)/10, 77/10 -
 \end{aligned}$$

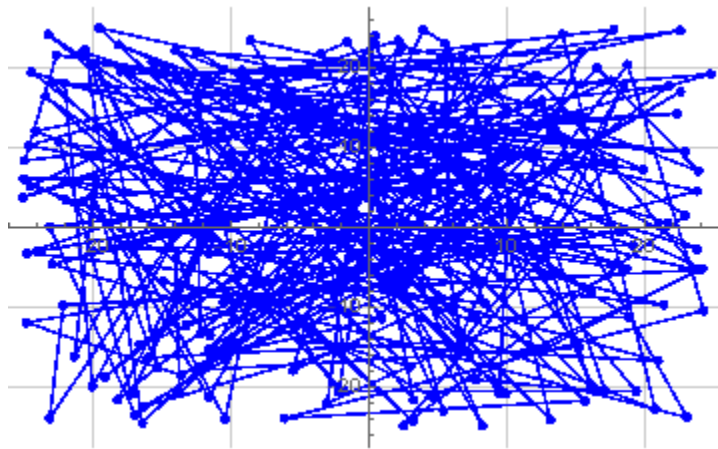
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(113 I)/10,-(116/5)+(241 I)/10,77/10-(96 I)/5,81/5-(41 I)/2,-(34/5)+(189 I)/10,-(49/2)+(51
I)/10,-(89/5)+(6 I)/5,-(47/5)+(3 I)/2,-24-(31 I)/10,41/10+(27 I)/5,-(49/10)-(72 I)/5,209/10-(84
I)/5,-(219/10)+(33 I)/10,11/10+(69 I)/10,-(63/5)-I/2,-(207/10)+(219 I)/10,237/10-(14
I)/5,9/2+(74 I)/5,-(113/5)+(43 I)/2,-(249/10)+(83 I)/10,217/10+(177 I)/10,9/5-(39 I)/5,-
(86/5)+(96 I)/5,46/5+(199 I)/10,-(58/5)-(153 I)/10,117/10+(19 I)/2,-(229/10)-(47 I)/10,3-(35
I)/2,-(122/5)+(97 I)/5,179/10-(23 I)/5,7/5+(3 I)/10,99/10-(209 I)/10,-(139/10)+(92
I)/5,237/10+(9 I)/2,-(66/5)-(123 I)/10,52/5+9 I,117/10+(44 I)/5,-9+(27 I)/5,12/5+(45
I)/2,153/10+(89 I)/5,247/10+(191 I)/10,-(49/10)+(49 I)/10,25/2+(79 I)/5,4/5-(56 I)/5,-
(87/10)+(109 I)/10,223/10+(71 I)/5,-10+(46 I)/5,-(231/10)-24 I,-(221/10)-(49 I)/5,119/5-(27
I)/5,127/10-(153 I)/10,1-(15 I)/2,49/5+(101 I)/10,-(25/2)-18 I,76/5-(151 I)/10,3/2+18 I,-
(91/10)+(193 I)/10,177/10+(247 I)/10,-(14/5)-(19 I)/5,-(19/10)-(153 I)/10,-(82/5)-(113 I)/5,-
(52/5)-(167 I)/10,-(71/10)-(12 I)/5,101/10+(27 I)/10,47/5-(104 I)/5,-(9/2)+(101 I)/10,191/10-
(23 I)/10,-(58/5)-(17 I)/5,35/2+(183 I)/10,-8+(161 I)/10,108/5+I/2,-(21/2)-(19 I)/2,-(81/10)-(31
I)/5,-(11/5)-(207 I)/10,21/10+(233 I)/10,-(123/5)+(51 I)/5,64/5-(31 I)/10,5/2-(249
I)/10,229/10+(7 I)/5,74/5+(52 I)/5,-(197/10)+(41 I)/2,-(23/2)-(68 I)/5,-(207/10)+(16 I)/5,-
(21/2)+(197 I)/10,-(37/10)+19 I,-(241/10)+12 I,-20+9 I,83/10-(34 I)/5,-(11/2)-18 I,-(11/5)+(14
I)/5,39/10+(11 I)/2}}

```

```
seq3=complexValues = seq2 /. (x_ -> y_) :> y
```

```
ListLinePlot[ReIm@seq3, PlotStyle -> Blue, PlotMarkers -> Automatic, GridLines -> Automatic]
```



This is the general pattern for the polynomial mod distribution of all primes, no matter what it repeats for different values

```
seq2 = {32, 164, 280, 488, 541, 640, 689, 738, 785, 976, 1020, 1113,
1159, 1208, 1253, 1297, 1383, 1564, 1689, 1738, 1829, 1873, 1953,
1995, 2084, 2162};
```

```
(* Defina seq1 como uma variável simbólica *)
Clear[x];
seq1 = Array[x, Length[seq2]];
```

(* Calcular a diferença entre seq2 e seq1 *)

b = seq2 - seq1;

(* Calcular Mod[seq2, seq1] *)

c = Mod[seq2, seq1];

(* Calcular Mod[b, seq1] *)

d = Mod[b, seq1];

(* Resolver a equação c == d para encontrar os valores de seq1 *)

sol = FindInstance[c == d, seq1];

(* Mostrar os resultados *)

sol

bn=complexValues = sol /. (x_ -> y_) :> y

bb=Flatten[bn]

vb=seq2/bb

ListLinePlot[ReIm@vb, PlotStyle -> Blue, PlotMarkers -> Automatic, GridLines -> Automatic]

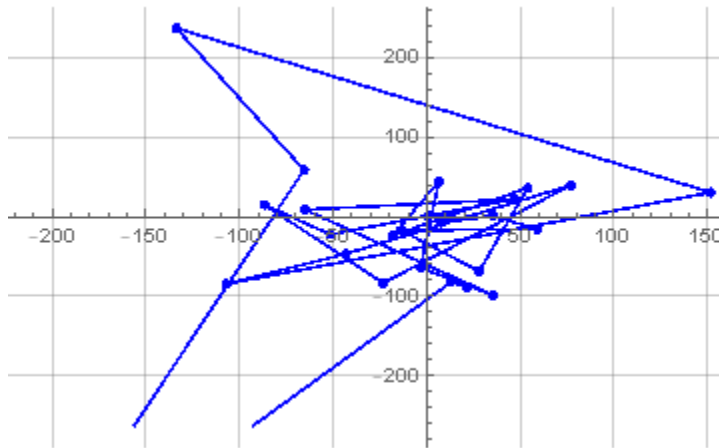
{{x[1]->171/10-(103 I)/5,x[2]->64/5+I/10,x[3]->92/5+(89 I)/5,x[4]->69/5-I/5,x[5]->17/2+(23 I)/10,x[6]->-(181/10)+(114 I)/5,x[7]->7/2+(43 I)/5,x[8]->19/2-(63 I)/10,x[9]->-(157/10)+(207 I)/10,x[10]->16/5-(217 I)/10,x[11]->-(4/5)+(79 I)/5,x[12]->18/5+10 I,x[13]->-(35/2)-(23 I)/10,x[14]->213/10-(49 I)/5,x[15]->-(102/5)+(89 I)/10,x[16]->-(29/2)-(5 I)/2,x[17]->-(43/10)+(77 I)/5,x[18]->161/10-(41 I)/5,x[19]->-18+(39 I)/2,x[20]->-10+(79 I)/10,x[21]->58/5-(23 I)/10,x[22]->-(17/5)-6 I,x[23]->-(83/5)-(74 I)/5,x[24]->-(8/5)+(7 I)/2,x[25]->39/10+(247 I)/10,x[26]->11/2+23 I}}

{{171/10-(103 I)/5,64/5+I/10,92/5+(89 I)/5,69/5-I/5,17/2+(23 I)/10,-(181/10)+(114 I)/5,7/2+(43 I)/5,19/2-(63 I)/10,-(157/10)+(207 I)/10,16/5-(217 I)/10,-(4/5)+(79 I)/5,18/5+10 I,-(35/2)-(23 I)/10,213/10-(49 I)/5,-(102/5)+(89 I)/10,-(29/2)-(5 I)/2,-(43/10)+(77 I)/5,161/10-(41 I)/5,-18+(39 I)/2,-10+(79 I)/10,58/5-(23 I)/10,-(17/5)-6 I,-(83/5)-(74 I)/5,-(8/5)+(7 I)/2,39/10+(247 I)/10,11/2+23 I}}

{171/10-(103 I)/5,64/5+I/10,92/5+(89 I)/5,69/5-I/5,17/2+(23 I)/10,-(181/10)+(114 I)/5,7/2+(43 I)/5,19/2-(63 I)/10,-(157/10)+(207 I)/10,16/5-(217 I)/10,-(4/5)+(79 I)/5,18/5+10 I,-(35/2)-(23 I)/10,213/10-(49 I)/5,-(102/5)+(89 I)/10,-(29/2)-(5 I)/2,-(43/10)+(77 I)/5,161/10-(41 I)/5,-18+(39 I)/2,-10+(79 I)/10,58/5-(23 I)/10,-(17/5)-6 I,-(83/5)-(74 I)/5,-(8/5)+(7 I)/2,39/10+(247 I)/10,11/2+23 I}

{54720/71677+(65920 I)/71677,41984/3277-(328 I)/3277,25760/3277-(24920 I)/3277,84180/2381+(1220 I)/2381,229925/3877-(62215 I)/3877,-(231680/16949)-(291840 I)/16949,241150/8621-(592540 I)/8621,350550/6497+(232470 I)/6497,-(616225/33749)-(812475 I)/33749,312320/48113+(2117920 I)/48113,-(20400/6257)-(402900 I)/6257,50085/1412-(139125 I)/1412,-(1014125/15577)+(133285 I)/15577,2573040/54973+(1183840 I)/54973,-(2556120/49537)-(1115170 I)/49537,-(37613/433)+(6485 I)/433,-(118938/5113)-(425964 I)/5113,503608/6529+(256496 I)/6529,-

$(13512/313)-(14638\text{ I})/313,-(1738000/16241)-(1373020\text{ I})/16241,424328/2797+(84134\text{ I})/2797,-(159205/1189)+(280950\text{ I})/1189,-(162099/2473)+(144522\text{ I})/2473,-(319200/1481)-(698250\text{ I})/1481,6252/481-(39596\text{ I})/481,47564/2237-(198904\text{ I})/2237\}$



$\text{seq2} = \{131, 551, 971, 1391, 1811, 2231, 2651, 3071, 3491, 3911, 4331, 4751, 5171, 5591, 6011, 6431, 6851, 7271, 7691, 8111, 8531, 8951, 9371, 9791, 10211, 10631\}$

(* Defina seq1 como uma variável simbólica *)

```
Clear[x];
```

```
seq1 = Array[x, Length[seq2]];
```

(* Calcular a diferença entre seq2 e seq1 *)

```
b = seq2 - seq1;
```

(* Calcular Mod[seq2, seq1] *)

```
c = Mod[seq2, seq1];
```

(* Calcular Mod[b, seq1] *)

```
d = Mod[b, seq1];
```

(* Resolver a equação $c == d$ para encontrar os valores de seq1 *)

```
sol = FindInstance[c == d, seq1];
```

(* Mostrar os resultados *)

sol

bn=complexValues = sol /. (x_ -> y_) :> y

bb=Flatten[bn]

vb=seq2/bb

ListLinePlot[ReIm@vb, PlotStyle -> Blue, PlotMarkers -> Automatic, GridLines -> Automatic]

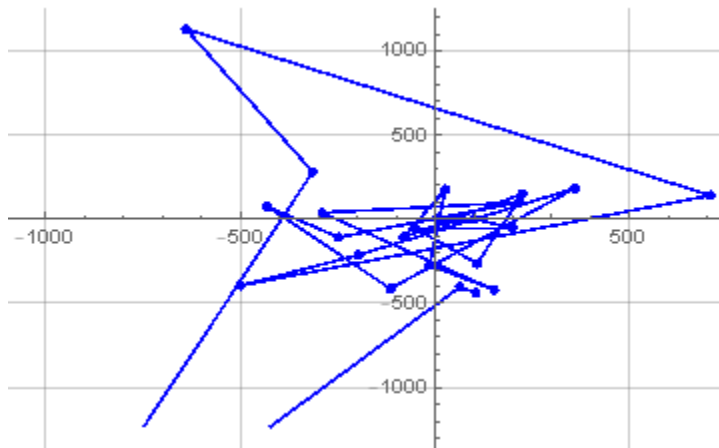
{131,551,971,1391,1811,2231,2651,3071,3491,3911,4331,4751,5171,5591,6011,6431,6851,7271,7691,8111,8531,8951,9371,9791,10211,10631}

{{x[1]->171/10-(103 I)/5,x[2]->64/5+I/10,x[3]->92/5+(89 I)/5,x[4]->69/5-I/5,x[5]->17/2+(23 I)/10,x[6]->-(181/10)+(114 I)/5,x[7]->7/2+(43 I)/5,x[8]->19/2-(63 I)/10,x[9]->-(157/10)+(207 I)/10,x[10]->16/5-(217 I)/10,x[11]->-(4/5)+(79 I)/5,x[12]->18/5+10 I,x[13]->-(35/2)-(23 I)/10,x[14]->213/10-(49 I)/5,x[15]->-(102/5)+(89 I)/10,x[16]->-(29/2)-(5 I)/2,x[17]->-(43/10)+(77 I)/5,x[18]->161/10-(41 I)/5,x[19]->-18+(39 I)/2,x[20]->-10+(79 I)/10,x[21]->58/5-(23 I)/10,x[22]->-(17/5)-6 I,x[23]->-(83/5)-(74 I)/5,x[24]->-(8/5)+(7 I)/2,x[25]->39/10+(247 I)/10,x[26]->11/2+23 I}}

{{171/10-(103 I)/5,64/5+I/10,92/5+(89 I)/5,69/5-I/5,17/2+(23 I)/10,-(181/10)+(114 I)/5,7/2+(43 I)/5,19/2-(63 I)/10,-(157/10)+(207 I)/10,16/5-(217 I)/10,-(4/5)+(79 I)/5,18/5+10 I,-(35/2)-(23 I)/10,213/10-(49 I)/5,-(102/5)+(89 I)/10,-(29/2)-(5 I)/2,-(43/10)+(77 I)/5,161/10-(41 I)/5,-18+(39 I)/2,-10+(79 I)/10,58/5-(23 I)/10,-(17/5)-6 I,-(83/5)-(74 I)/5,-(8/5)+(7 I)/2,39/10+(247 I)/10,11/2+23 I}}

{171/10-(103 I)/5,64/5+I/10,92/5+(89 I)/5,69/5-I/5,17/2+(23 I)/10,-(181/10)+(114 I)/5,7/2+(43 I)/5,19/2-(63 I)/10,-(157/10)+(207 I)/10,16/5-(217 I)/10,-(4/5)+(79 I)/5,18/5+10 I,-(35/2)-(23 I)/10,213/10-(49 I)/5,-(102/5)+(89 I)/10,-(29/2)-(5 I)/2,-(43/10)+(77 I)/5,161/10-(41 I)/5,-18+(39 I)/2,-10+(79 I)/10,58/5-(23 I)/10,-(17/5)-6 I,-(83/5)-(74 I)/5,-(8/5)+(7 I)/2,39/10+(247 I)/10,11/2+23 I}

{224010/71677+(269860 I)/71677,4864/113-(38 I)/113,89332/3277-(86419 I)/3277,479895/4762+(6955 I)/4762,769675/3877-(208265 I)/3877,-(807622/16949)-(1017336 I)/16949,927850/8621-(2279860 I)/8621,1458725/6497+(967365 I)/6497,-(2740435/33749)-(3613185 I)/33749,1251520/48113+(8486870 I)/48113,-(86620/6257)-(1710745 I)/6257,213795/1412-(593875 I)/1412,-(4524625/15577)+(594665 I)/15577,11908830/54973+(5479180 I)/54973,-(12262440/49537)-(5349790 I)/49537,-(186499/433)+(32155 I)/433,-(589186/5113)-(2110108 I)/5113,2341262/6529+(1192444 I)/6529,-(61528/313)-(199966 I)/939,-(8111000/16241)-(6407690 I)/16241,1979192/2797+(392426 I)/2797,-(760835/1189)+(1342650 I)/1189,-(777793/2473)+(693454 I)/2473,-(1566560/1481)-(3426850 I)/1481,30633/481-(194009 I)/481,233882/2237-(978052 I)/2237}



```
seq2 = {32, 164, 280, 488, 541, 640, 689, 738, 785, 976, 1020, 1113, 1159, 1208, 1253, 1297,
1383, 1564, 1689, 1738, 1829, 1873, 1953, 1995, 2084, 2162};
```

```
(* Defina seq1 como uma variável simbólica *)
```

```
Clear[x];
```

```
seq1 = Array[x, Length[seq2]];
```

```
(* Calcular a diferença entre seq2 e seq1 *)
```

```
b = seq2 - seq1;
```

```
(* Calcular Mod[seq2, seq1] *)
```

```
c = Mod[seq2, seq1];
```

```
(* Calcular Mod[b, seq1] *)
```

```
d = Mod[b, seq1];
```

```
(* Resolver a equação c == d para encontrar os valores de seq1 *)
```

```
sol = FindInstance[c == d, seq1];
```

```
(* Mostrar os resultados *)
```

```
sol
```

```
bn=Im[complexValues = sol /. {x_ -> y_} :> y]
```

```
bb=Flatten[bn]
```


vb=seq2+bb

vc=seq2-bb

xy=(vb+vc)/2

N[%,9]

ListLinePlot[ReIm@vb, PlotStyle -> Blue, PlotMarkers -> Automatic, GridLines -> Automatic]

{{x[1]->171/10-(103 I)/5,x[2]->64/5+I/10,x[3]->92/5+(89 I)/5,x[4]->69/5-I/5,x[5]->17/2+(23 I)/10,x[6]->-(181/10)+(114 I)/5,x[7]->7/2+(43 I)/5,x[8]->19/2-(63 I)/10,x[9]->-(157/10)+(207 I)/10,x[10]->16/5-(217 I)/10,x[11]->-(4/5)+(79 I)/5,x[12]->18/5+10 I,x[13]->-(35/2)-(23 I)/10,x[14]->213/10-(49 I)/5,x[15]->-(102/5)+(89 I)/10,x[16]->-(29/2)-(5 I)/2,x[17]->-(43/10)+(77 I)/5,x[18]->161/10-(41 I)/5,x[19]->-18+(39 I)/2,x[20]->-10+(79 I)/10,x[21]->58/5-(23 I)/10,x[22]->-(17/5)-6 I,x[23]->-(83/5)-(74 I)/5,x[24]->-(8/5)+(7 I)/2,x[25]->39/10+(247 I)/10,x[26]->11/2+23 I}}

{{-(103/5),1/10,89/5,-(1/5),23/10,114/5,43/5,-(63/10),207/10,-(217/10),79/5,10,-(23/10),-(49/5),89/10,-(5/2),77/5,-(41/5),39/2,79/10,-(23/10),-6,-(74/5),7/2,247/10,23}}

{{-(103/5),1/10,89/5,-(1/5),23/10,114/5,43/5,-(63/10),207/10,-(217/10),79/5,10,-(23/10),-(49/5),89/10,-(5/2),77/5,-(41/5),39/2,79/10,-(23/10),-6,-(74/5),7/2,247/10,23}}

{57/5,1641/10,1489/5,2439/5,5433/10,3314/5,3488/5,7317/10,8057/10,9543/10,5179/5,1123,11567/10,5991/5,12619/10,2589/2,6992/5,7779/5,3417/2,17459/10,18267/10,1867,9691/5,3997/2,21087/10,2185}

{263/5,1639/10,1311/5,2441/5,5387/10,3086/5,3402/5,7443/10,7643/10,9977/10,5021/5,1103,11613/10,6089/5,12441/10,2599/2,6838/5,7861/5,3339/2,17301/10,18313/10,1879,9839/5,3983/2,20593/10,2139}

{32,164,280,488,541,640,689,738,785,976,1020,1113,1159,1208,1253,1297,1383,1564,1689,1738,1829,1873,1953,1995,2084,2162}

{32.0000000,164.000000,280.000000,488.000000,541.000000,640.000000,689.000000,738.000000,785.000000,976.000000,1020.00000,1113.00000,1159.00000,1208.00000,1253.00000,1297.00000,1383.00000,1564.00000,1689.00000,1738.00000,1829.00000,1873.00000,1953.00000,1995.00000,2084.00000,2162.00000}

We have the following equation: $(a+b)+(a-b)^2=a\frac{(a+b) + (a-b)}{2} = a$

To simplify, we first solve for the numerator:

$$(a+b)+(a-b)=a+b+a-b=2a(a+b) + (a-b) = a + b + a - b = 2a$$

Now, we divide by 2:

$$2a = a \frac{2a}{2} = a$$

So, the equation is true.

However, saying that $b+b=ab + b = a$ is not necessarily true. This would only be valid if bb were half of aa , that is, $a=2ba = 2b$. In any other case, $b+bb + b$ will not be equal to aa .

However, in the relationship observed for the numbers that represent the position of a given prime number according to the combination of its different Mods (seq1), the complex numbers with their imaginary part subtracted or added to the sequence (seq1) should result in a number that is equal to twice a and if divided by 2 should result in the numbers of the original sequence seq1.

```
(* Defina a sequência seq2 *)
```

```
seq2 = {32, 164, 280, 488, 541, 640, 689, 738, 785, 976, 1020, 1113, 1159, 1208, 1253,
1297, 1383, 1564, 1689, 1738, 1829, 1873, 1953, 1995, 2084, 2162};
```

```
(* Defina seq1 como uma variável simbólica *)
```

```
Clear[x];
```

```
seq1 = Array[x, Length[seq2]];
```

```
(* Calcular a diferença entre seq2 e seq1 *)
```

```
b = seq2 - seq1;
```

```
(* Calcular Mod[seq2, seq1] *)
```

```
c = Mod[seq2, seq1];
```

```
(* Calcular Mod[b, seq1] *)
```

```
d = Mod[b, seq1];
```

```
(* Resolver a equação c == d para encontrar os valores de seq1 *)
```

```
sol = FindInstance[c == d, seq1];
```

```
(* Mostrar os resultados *)
```

[illegible]

