

Less than <
Equal to =
Greater than >

Hello SeqFans,
We want a sequence S of terms a(n) such that:
1) a(1)=1
2) any three consecutive digits d, e and f of S don't show d < e < f
3) S is extended with the smallest integer not yet present in S.

I guess S starts like this:

S = 1, 2, 10, 3, 11, 4, 12, 13, 14, 15, 5, 6, 16, 17, 7, 8, 18, 19, 20-120, 200, 201, 121, 122, 130, 202, 131, 132, 133, 140, 203, 141, 142, 143, 144, 150, 204, 151, 152, 153, 154, 155, 160, 205, ...

[20-120, above, meaning "all integers from 20 to 120, including 20 and 120"]

Playing with the signs <, =, > to be put between d, e and f, one could compute the sequences S to Z with:

S NOT showing d < e < f
T d <= e < f
U d < e <= f
V d <= e <= f
W d > e > f
X d >= e > f
Y d > e >= f
Z d >= e >= f

Best,
É.

[Lars Blomberg]:

Hello Eric!

Here is what I found, using all 25 combinations of the 5 relations GT, GE, LT, LE, EQ.
[GT = greater; GE = greater or equal; LT = littler; LE = littler or equal; EQ = equal]
A thousand terms were computed and then compressed.
Some sequences seem to stop, and some continue with all 1's or all 9's.
Your sequence [Sa] is the first one: LT LT.

/Lars
[September 29th, 2013]

Relations: LT LT [3 digits in Sa are NOT such that d < e < f] - [1000 terms and 68 compressions]:

[Sa] = 1,2,10,3,11,4,12-15,5,6,16,17,7,8,18,19,9,20-120,200,201,121,122,130,202,131-133,
140,203,141-144,150,204,151-155,160,205,161-166,170,206,171-177,180,207,181-188,190,
208,191-199,209-230,300,301,1000,302,231,303,232,233,240,304,241,305,242-244,250,306,
251,307,252-255,260,308,261,309,262-266,270,310-312,271,313,272-277,280,314,281,315,
282-288,290,316,291,317,292-299,318-340,400,401,1001-1003,341,402,1004,342,403,343,
344,350,404,351,405,352,406,353-355,360,407,361,408,362,409,363-366,370,410-412,1005,
371,413,372,414,373-377,380,415,381,416,382,417,383-388,390,418,391,419,392,420-423,
393-399,424-450,500,501,1006,451,502,1007,452,503,1008,453,504,454,455,460,505,461,
506,462,507,463,508,464-466,470,509,471,510-512,1009,472,513,1010,514,473,515,474-477,
480,516,481,517,482,518,483,519,484-488,490,520-523,1011,524,491,525,492,526,493,527,
494-499,528-534,1020,535-560,600,601,1021,602,1022,603,1030,604,1031,605,561,606,562,
607,563,608,564,609,565,566,570,610-612,1032,613,1033,614,1040,615,571,616,572,617,
573,618,574,619,575-577,580,620-623,1041,624,1042,625,581,626,582,627,583,628,584,
629,585-588,590,630-634,1043,635,591,636,592,637,593,638,594,639,595-599,640-645,1044,
646-670,700,701,1050,702,1051,703,1052,704,1053,705,1054,706,671,707,672,708,673,709,
674,710-712,1055,713,1060,714,1061,715,1062,716,675,717,676,677,680,718,681,719,682,
720-723,1063,724,1064,725,1065,726,683,727,684,728,685,729,686-688,690,730-734,1066,
691,735,1070,736,692,737,693,738,694,739,695,740-745,1071,746,696-699,747-756,1072,
757-780,800,801,1073,802,1074,803,1075,804,1076,805,1077,781,806,1080,807,782,808,
783,809,784,810-812,1081,813,1082,814,1083,815,1084,816,1085,817,785,818,786,819,787,
788,790,820-823,1086,824,1087,791,825,1088,792,826,1090,827,793,828,794,829,795,830-834,
1091,835,1092,836,1093,837,796,838,797-799,839-845,1094,846,1095,847,1096,848-856,
1097,857,1098,858-867,1099,868-890,900,901,1100,902,1101-1108,891,903,1109,892,904,
1110,905,1111,906,1112-1118,893,907,1119,894,908,895,909,896,910-912,1120,913,1121,
914,1122,915,1130,916,1131,917,1132,918,897,919,898,899,920-923,1133,924,1140,925,
1141,926,1142,927,1143,928,1144,929-934,1150,935,1151,936,1152,937,1153,938,1154,939-945,
1155,946,1160,947,1161,948,1162,949-956,1163,957,1164,958,1165,959-967,1166,968,1170,
969-974,...

Relations: LT LE [3 digits in Sb are NOT such that d < e <= f] - [1000 terms and 86 compressions]:

[Sb] = 1,2,10,3,11,4,12-16,5,6,17,18,7,8,19,20,9,21,30-32,22-29,33-43,50-54,44-49,55-65,
70-76,66-69,77-87,90-98,88,89,100,102-110,200,202,111-120,203,121,130,204,131,132,
140,205,141-143,150,206,151-154,160,207,161-165,170,208,171-176,180,209,181-187,190,
210,211,191-198,212,1000,213-220,300,302,1002,1003,221,303,222-230,304,231,305,232,
240,306,241,307,242,243,250,308,251,309,252-254,260,310-312,1004,261,313,262-265,270,
314,271,315,272-276,280,316,281,317,282-287,290,318,291,319,292-298,320-323,1005,324-330,
400,402,1006,331,403,1007,332,404,333-340,405,341,406,342,407,343,350,408,351,409,
352,410-412,1008,353,354,360,413,1009,361,414,362,415,363-365,370,416,371,417,372,
418,373-376,380,419,381,420-423,1010,424,382,425,383-387,390,426,391,427,392,428,393-398,
429-434,1020,435-440,500,502,1021,503,1030,504,1031,505,441,506,442,507,443,508,444-450,
509,451,510-512,1032,513,1040,514,1041,515,452,516,453,517,454,460,518,461,519,462,
520-523,1042,524,1043,525,463,526,464,465,470,527,471,528,472,529,473,530-534,1050,
535,474-476,480,536,481,537,482,538,483,539,484-487,490,540-544,491,545,492,546,493,
547,494-498,548-550,600,602,1051,603,1052,604,1053,605,1054,606,551,607,552,608,553,
609,554,610-612,1060,613,1061,614,1062,615,1063,616,555-560,617,561,618,562,619,563,
620-623,1064,624,1065,564,625,1070,626,565,570,627,571,628,572,629,573,630-634,1071,

635,1072,636,574,637,575,576,580,638,581,639,582,640-645,1073,646,583,647,584,648,
585-587,590,649,591,650-655,592,656,593,657,594,658,595-598,659,660,700,702,1074,703,
1075,704,1076,661,705,1080,706,1081,707,662,708,663,709,664,710-712,1082,713,1083,
714,1084,715,1085,716,1086,665,717,666-670,718,671,719,672,720-723,1087,673,724,1090,
725,1091,726,1092,727,674,728,675,729,676,680,730-734,1093,735,1094,736,1095,737,681,
738,682,739,683,740-745,1096,684,746,1097,685,747,686,687,690,748,691,749,692,750-756,
1098,693,757,694,758,695,759,696-698,760-767,1100,768-770,800,802,1102-1108,771,803,
1109,772,804,1110,805,1111,806,1112-1118,773,807,1119,774,808,775,809,776,810-812,
1120,813,1121,814,1130,815,1131,816,1132,817,1140,818,777-780,819,781,820-823,1141,
824,1142,825,1143,826,1150,827,1151,828,782,829,783,830-834,1152,835,1153,836,1154,
837,1160,838,784,839,785,840-845,1161,846,1162,847,1163,848,786,849,787,790,850-856,
1164,857,1165,858,791,859,792,860-867,1170,868,793,869,794,870-877,795,878,796,879,
797,798,880,900,902,1171,903,1172,904,1173,905,1174,906,1175,907,1176,908,1180,909,
881,910-912,1181,913,1182,914,1183,915,1184,916,1185,917,1186,918,1187,919,882,920-923,
1190,924,1191,925,1192,926,1193,927,1194,928,1195,929,883,930-934,1196,935,1197,936,
1198,884,937,1200,938,1202-1209,885,939,886,940-945,1210,946,1211,947,1212-1219,887,
948,1300,949,888-890,950-956,1302-1309,891,957,1310,958,1311,959,892,960-967,1312-1319,
893,968,1320,969,894,970-978,...

Relations: LT GT [3 digits in Sc are NOT such that d < e > f] - [1000 terms and 10 compressions]:

[Sc] = 1-9,90,11,10,12,20,13,30,14,40,15,50,16,60,17,70,18,80,19,91,22,21,23,31,24,41,
25,51,26,61,27,71,28,81,29,92,33,32,34,42,35,52,36,62,37,72,38,82,39,93,44,43,45,53,
46,63,47,73,48,83,49,94,55,54,56,64,57,74,58,84,59,95,66,65,67,75,68,85,69,96,77,76,
78,86,79,97,88,87,89,98-100,110,111,101,102,200,112,201,103,300,113,301,104,400,114,
401,105,500,115,501,106,600,116,601,107,700,117,701,108,800,118,801,109,900,119,901,
122,123,302,202,203,303,304,402,204,403,305,502,205,503,306,602,206,603,307,702,207,
703,308,802,208,803,309,902,209,903,310,124,404,405,504,406,604,407,704,408,804,409,
904,410,125,505,506,605,507,705,508,805,509,905,510,126,606,607,706,608,806,609,906,
610,127,707,708,807,709,907,710,128,808,809,908,810,129,909,910,133,134,411,135,511,
136,611,137,711,138,811,139,911,144,145,512,210,146,612,211,147,712,212,213,311,148,
812,214,412,215,513,312,216,613,313,314,413,315,514,414,415,515,516,614,416,615,517,
713,316,616,617,714,417,715,518,813,317,716,618,814,418,815,519,912,217,717,718,816,
619,913,318,817,719,914,419,915,520,149,916,620,155,156,621,157,720,158,818,819,917,
721,159,918,820,166,167,722,168,821,169,919,920,177,178,822,179,921,188,189,922,199,
218,823,319,923,320,220-222,219,924,420,223,321,224,421,225,521,226,622,227,723,322,
228,824,422,229,925,522,233,234,423,323,324,424,425,523,325,524,426,623,326,624,427,
724,428,825,525,526,625,527,725,528,826,626,627,726,628,827,727,728,828,829,926,629,
927,729,928,830,235,529,929,930,236,630,237,730,238,831,239,931,244,245,530,246,631,
247,731,248,832,249,932,255,256,632,257,732,258,833,259,933,266,267,733,268,834,429,
934,430,269,935,531,277,278,835,532,279,936,633,288,289,937,734,431,299,327,735,533,
328,836,634,432,330-333,329,938,837,736,635,534,433,334,434,435,535,536,636,637,737,
738,838,839,939,940,335,537,739,941,336,638,840,337,740,338,841,339,942,344,345,538,
842,346,639,943,347,741,348,843,349,944,355,356,640,357,742,358,844,359,945,539,946,
641,366,367,743,368,845,540,369,947,744,377,378,846,642,379,948,847,745,541,388,389,
949,950,399,436,643,440-444,437,746,644,438,848,849,951,445,542,446,645,543,447,747,
748,850,448,851,449,952,455,439,953,456,646,647,749,954,457,750,458,852,459,955,466,
467,751,468,853,469,956,648,854,477,478,855,479,957,752,488,489,958,856,649,959,960,
499,544,550-555,545,546,650,556,651,557,753,558,857,754,559,961,566,547,755,548,858,
859,962,567,756,652,568,860,569,963,577,549,964,578,861,579,965,588,589,966,599,653,
600-666,654,667,757,758,862,668,863,669,967,759,968,864,677,655,678,865,679,969,970,
688,656,657,760,689,971,699,658,866,659,972,770-777,761,778,867,762,779,973,788,763,
789,974,799,764,880-887,765,888,766,889,975,899,767,768,868,869,976,990-997,769,977,
998,870,999,871,1000,1100,1101,1001,1002,2000,1102,2001,1003,3000,1103,3001,1004,4000,
1104,4001,1005,5000,1105,5001,1006,6000,1106,6001,1007,7000,1107,7001,1008,872,1009,
978,873,1011,1012,2002,2003,3002,2004,4002,2005,5002,2006,6002,2007,7002,2008,874,
1013,3003,3004,4003,3005,5003,3006,6003,3007,7003,3008,875,1014,4004,4005,5004,4006,
6004,4007,7004,4008,876,1015,5005,5006,6005,5007,7005,5008,877,1016,6006,6007,7006,
6008,878,879,979,980,1108,8000,1109,981,1017,7007,7008,8001,1018,8002,2009,982,1019,
983,1022,1023,3009,984,1024,4009,985,1025,5009,986,1026,6009,987,1027,7009,988,1028,
8003,3011,1029,989,9000,1110,1111,1033,1034,4011,1035,5011,1036,6011,1037,7011,1038,
8004,4012,2011,1039,9001,1044,1045,5012,2012,2013,3012,2014,4013,3013,3014,4014,4015,
5013,3015,5014,4016,6012,2015,5015,5016,6013,3016,6014,4017,7012,2016,6015,5017,7013,
3017,7014,4018,8005,5018,8006,6016,6017,7015,5019,9002,2017,7016,6018,8007,7017,7018,
8008,8009,9003,3018,8011,1046,6019,9004,4019,9005,5022,1047,7019,9006,6022,1048,8012,
2018,8013,3019,9007,7022,1049,9008,8014,4022,1055,1056,6023,3022,1057,7023,3023,3024,
4023,3025,5023,3026,6024,4024,4025,5024,4026,6025,5025,5026,6026,6027,7024,4027,7025,
5027,7026,6028,8015,5028,8016,6029,9009,9011,1058,8017,7027,7028,8018,8019,9012,2019,
9013,3027,7029,9014,4028,8022,1059,...

Relations: LT GE [3 digits in Sd are NOT such that d < e >= f] - [sequence has only 9 terms]:

[Sd] = 1,2,3,4,5,6,7,8,9 stop

Relations: LT EQ [the digits in Se are NOT such that d < e = f] - [1000 terms and 100 compressions]:

[Se] = 1-10,12,11,13-21,23,22,24-32,34,33,35-43,45,44,46-54,56,55,57-65,67,66,68-76,
78,77,79-87,89,88,90-98,100,101,200,102-110,120,121,111-119,123-132,134-143,145-154,
156-165,167-176,178-187,189-198,201,202,300,203-212,301,213-220,230-232,221,234,222-229,
235-243,245-254,256-265,267-276,278-287,289-298,302,303,400,304-313,401,314-323,402,
324-330,340-343,331,345,332,346,333-339,347-354,356-365,367-376,378-387,389-398,403,
404,500,405-414,501,415-424,502,425-434,503,435-440,450-454,441,456,442,457,443,458,
444-449,459-465,467-476,478-487,489-498,504,505,600,506-515,601,516-525,602,526-535,
603,536-545,604,546-550,560-565,551,567,552,568,553,569,554,570-575,555-559,576,578-587,
589-598,605,606,700,607-616,701,617-626,702,627-636,703,637-646,704,647-656,705,657-660,
670-676,661,678,662,679,663,680-686,664,687,665,689,666-669,690-698,706,707,800,708-717,
801,718-727,802,728-737,803,738-747,804,748-757,805,758-767,806,768-770,780-787,771,
789,772,790-797,773,798,774,807,808,775,809,776,810-818,777-779,819-828,900,829-838,
901,839-848,902,849-858,903,859-868,904,869-878,905,879,880,890-898,881,906-909,882,
910-919,883,920-929,884,930-939,885,940-949,886,950-959,887,960-969,888,889,1000,970-979,
1001,980-989,1002-1010,1012-1021,1023-1032,1034-1043,1045-1051,...

Relations: LE LT [3 digits in Sf are NOT such that d <= e < f] - [1000 terms and 73 compressions]:

[Sf] = 1,2,10,3,11,101,102,12-14,4,15,5,16,6,17,7,18,8,19,9,20-22,103,23-33,104,34-44,
105,45-55,106,56-66,107,67-77,108,78-88,109,89-99,110,111,1010,201,1011,1020,202,120,
203,121,204,122,130,205,131,206,132,133,140,207,141,208,142-144,150,209,151,210,211,
1021,212,152-155,160,213,161,214,162-166,170,215,171,216,172-177,180,217,181,218,182-188,
190,219,191,220-222,192-199,230,301,1022,1030,302,1031,303,231,304,232,305,233,240,
306,241,307,242,308,243,244,250,309,251,310,311,1032,312,1033,252,313,253-255,260,
314,261,315,262,316,263-266,270,317,271,318,272,319,273-277,280,320-322,1040,323,281,
324,282,325,283-288,290,326,291,327,292,328,293-299,329-333,1041,401,1042,402,1043,
403,1044,340,404,341,405,342,406,343,407,344,350,408,351,409,352,410,411,1050,412,
1051,413,1052,414,353,415,354,355,360,416,361,417,362,418,363,419,364-366,370,420-422,
1053,423,1054,371,424,372,425,373,426,374-377,380,427,381,428,382,429,383,430-433,
1055,384-388,390,434,391,435,392,436,393,437,394-399,438-444,1060,501,1061,502,1062,
503,1063,504,1064,505,450,506,451,507,452,508,453,509,454,510,511,1065,455,460,512,
1066,461,513,1070,514,1071,515,462,516,463,517,464,518,465,466,470,519,471,520-522,
1072,523,1073,524,1074,525,472,526,473,527,474,528,475-477,480,529,481,530-533,1075,
482,534,1076,483,535,484,536,485-488,490,537,491,538,492,539,493,540-544,1077,494,
545,495-499,546-555,1080,601,1081,602,1082,603,1083,604,1084,605,1085,606,560,607,
561,608,562,609,563,610,611,1086,564,612,1087,565,613,1088,566,570,614,1090,615,1091,
616,571,617,572,618,573,619,574,620-622,1092,623,1093,624,1094,625,1095,626,575,627,
576,577,580,628,581,629,582,630-633,1096,583,634,1097,584,635,1098,585,636,586-588,
590,637,591,638,592,639,593,640-644,1099,594,645,1101-1106,595,646,596-599,647-655,
1107,656-666,1108,670,701,1109,671,702,1110,703,1111,10101,10102,1201,10103,1202-1207,
672,704,1208,673,705,1209,674,706,1210,707,675,708,676,709,677,680,710,711,10104,1211,
10105,1212-1217,681,712,1218,682,713,1219,683,714,1220,715,1221,716,1222,1301,10106,
1302-1307,684,717,685,718,686,719,687,688,690,720-722,1308,691,723,1309,692,724,1310,
725,1311,10107,693,726,1312-1317,694,727,695,728,696,729,697-699,730-733,1318,734,
1319,735,1320,736,1321,737-744,1322-1327,745,1328,746,1329,747-755,1330,756,1331,757-766,
1332,767-777,1333,1401,10108,780,801,10109,781,802,1402-1408,782,803,1409,783,804,
1410,805,1411,10110,806,1412-1418,784,807,1419,785,808,786,809,787,810,811,10111,10201,
10202,1420,812,1421,813,1422-1428,788,790,814,1429,791,815,1430,816,1431,817,1432,
818,792,819,793,820-822,1433-1438,794,823,1439,795,824,1440,825,1441,826,1442,827,
1443,828,796,829,797,830-833,1444,1501,10203,1502-1508,798,799,834,1509,835,1510,836,
1511,10204,1512-1518,837,1519,838-844,1520,845,1521,846,1522-1528,847,1529,848-855,
1530,856,1531,857,1532,858-866,1533-1538,867,1539,868-877,1540,878-888,1541,901,10205,
1542,902,1543,903,1544-1549,890,904,1550,905,1551,906,1552,...

Relations: LE LE [3 digits in Sg are NOT such that d <= e <= f] - [1000 terms and 74 compressions]:

[Sg] = 1,2,10,3,12-15,4,5,16,17,6,7,18,19,8,9,20,21,30-32,40-43,22,102,103,23-29,33,
104,34-39,44,105,45-54,60-65,70-76,55,106,56-59,66,107,67-69,77,108,78-87,90-98,109,
88,110,202,120,203,121,204,130,205,131,206,132,140,207,141,208,142,143,150,209,89,
151,210,212,152-154,160,213,161,214,162-165,170,215,171,216,172-176,180,217,181,218,
182-187,190,219,191,302,192-198,220,303,221,304,230,305,231,306,232,307,240,308,241,
309,242,310,312,1010,313,243,250,314,251,315,252,316,253,254,260,317,261,318,262,319,
263-265,270,320-322,1020,323,271,324,272,325,273-276,280,326,281,327,282,328,283-287,
290,329,291,402,1021,403,292,404,293-298,330,405,331,406,332,407,340,408,341,409,342,
410,412,1030,413,1031,414,343,415,350,416,351,417,352,418,353,419,354,360,420-422,
1032,423,1040,424,361,425,362,426,363,427,364,365,370,428,371,429,372,430-433,1041,
434,373,435,374-376,380,436,381,437,382,438,383,439,384-387,390,502,1042,503,1043,
504,391,505,392,506,393,507,394-398,440,508,441,509,442,510,512,1050,513,1051,514,
1052,515,443,516,450,517,451,518,452,519,453,520-522,1053,523,1054,524,1060,525,454,
526,460,527,461,528,462,529,463,530-533,1061,534,1062,535,464,536,465,470,537,471,
538,472,539,473,540-544,1063,545,474,546,475,476,480,547,481,548,482,549,483,602,1064,
603,1065,484,604,1070,605,485-487,490,606,491,607,492,608,493,609,494,610,612,1071,
613,1072,614,1073,615,495-498,590,616,551,617,552,618,553,619,554,620-622,1074,623,
1075,624,1076,560,625,1080,626,561,627,562,628,563,629,564,630-633,1081,634,1082,635,
1083,636,565,637,570,638,571,639,572,640-644,1084,645,1085,646,573,647,574,648,575,
649,576,580,650-655,1086,581,656,582,657,583,658,584,659,585,702,1087,586,587,590,
703,1090,704,1091,705,1092,706,591,707,592,708,593,709,594,710,712,1093,713,1094,714,
1095,715,1096,595,716,596-598,660,717,661,718,662,719,663,720-722,1097,664,723,1098,
665,724,1102-1107,670,725,1108,671,726,1109,672,727,673,728,674,729,675,730-733,1202-1207,
676,734,1208,680,735,1209,681,736,1210,737,682,738,683,739,684,740-744,1212-1217,685,
745,1218,686,746,1219,687,690,747,691,748,692,749,693,750-755,1302-1307,694,756,1308,
695,757,696,758,697,698,759-766,1309,767,1310,768-770,802,1312-1318,771,803,1319,772,
804,1320,805,1321,806,1322-1328,773,807,1329,774,808,775,809,776,810,812,1402-1408,
780,813,1409,781,814,1410,815,1412-1418,782,816,1419,783,817,1420,818,784,819,785,
820-822,1421,823,1422-1428,786,824,1429,787,825,1430,826,1431,827,1432,828,790,829,
791,830-833,1433-1438,792,834,1439,793,835,1502-1508,794,836,1509,795,837,1510,838,
796,839,797,840-844,1512-1518,798,845,1519,846,1520,847,1521,848,1522-1529,849-855,
1530,856,1531,857,1532,858,1533-1539,859-866,1540,867,1541,868,1542,869-877,1543,878,
1544-1549,879,880,902,1602-1609,881,903,1610,904,1612-1619,882,905,1620,906,1621,907,
1622-1629,883,908,1630,909,884,910,912,1631,913,1632,914,1633-1639,885,915,1640,916,
1641,917,1642,918,1643,919,886,920-922,1644-1649,887,923,1650,924,1651,925,1652,926,
1653,927,1654,928,1655-1659,890,929,891,930-933,1702-1709,892,934,1710,935,1712-1719,
893,936,1720,937,1721,938,1722,1723,...

Relations: LE GT [3 digits in Sh are NOT such that d <= e > f] - [sequence is extended with lots of 9's]:

[Sh] = 1,2,3,4,5,6,7,8,9,99,999,9999,99999,999999,9999999,...

Relations: LE GE [3 digits in Si are NOT such that d <= e == f] - [sequence has 9 terms]:

[Si] = 1,2,3,4,5,6,7,8,9 stop

Relations: LE EQ [3 digits in Sj are NOT such that d <= e = f] - [1000 terms and 103 compressions]:

[Sj] = 1-10,12,11,20,13-19,21,23,22,30,24-29,31,32,34,33,40,35-39,41-43,45,44,50,46-49,
51-54,56,55,60,57-59,61-65,67,66,70,68,69,71-76,78,77,80,79,81-87,89,88,90-98,100,
101,200,102-110,120,121,123,112-119,124-132,134-143,145-154,156-165,167-176,178-187,
189-198,201,202,300,203-212,301,213-220,230-232,234,221,235,223-229,236-243,245-254,
256-265,267-276,278-287,289-298,302,303,400,304-313,401,314-323,402,324-330,340-343,
345,331,346,332,347,334-339,348-354,356-365,367-376,378-387,389-398,403,404,500,405-414,

501,415-424,502,425-434,503,435-440,450-454,456,441,457,442,458,443,459,445-449,460-465,
467-476,478-487,489-498,504,505,600,506-515,601,516-525,602,526-535,603,536-545,604,
546-550,560-565,567,551,568,552,569,553,570-576,554,578,556-559,579-587,589-598,605,
606,700,607-616,701,617-626,702,627-636,703,637-646,704,647-656,705,657-660,670-676,
678,661,679,662,680-687,663,689,664,690-697,665,698,667-669,706,707,800,708-717,801,
718-727,802,728-737,803,738-747,804,748-757,805,758-767,806,768-770,780-787,789,771,
790-798,772,807,808,773,809,774,810-818,775,819,776,820-828,778,779,829-838,900,839-848,
901,849-858,902,859-868,903,869-878,904,879,880,890-898,905-909,881,910-919,882,920-929,
883,930-939,884,940-949,885,950-959,886,960-969,887,970-979,889,1001,980-989,1002-1010,
1012-1021,1023-1032,1034-1043,1045-1054,1056-1061,...

Relations: GT LT [3 digits in Sk are NOT such that $d > e < f$] - [1000 terms and 36 compressions]:

[Sk] = 1-9,11,12,21,13,22,23,31,14,32,24,33,34,41,15,42,25,43,35,44,45,51,16,52,26,53,
36,54,46,55,56,61,17,62,27,63,37,64,47,65,57,66,67,71,18,72,28,73,38,74,48,75,58,76,
68,77,78,81,19,82,29,83,39,84,49,85,59,86,69,87,79,88,89,91,100,92,111,93,112,94,113,
95,114,96,115,97,116,98,117,99,118,119,200,121,122,211,123,221,124,222-229,300,125,
311,126,321,127,322,231,128,331,129,332,232,333,333-339,400,131,132,234,411,133,341,
134,421,135,422,235,431,136,432,236,433,342,237,441,137,442,238,443,343,344,444-449,
500,138,511,139,521,141,142,239,522,241,143,345,531,144,451,145,532,242,243,346,533,
347,541,146,542,244,452,245,543,348,544,453,349,551,147,552,246,553,351,148,554,454,
455,555-559,600,149,611,151,152,247,621,153,352,248,622,249,631,154,456,632,251,155,
561,156,633,353,354,457,641,157,642,252,253,355,562,254,458,643,356,644,459,651,158,
652,255,563,357,653,358,654,461,159,655,564,462,256,661,161,162,257,662,258,663,359,
664,463,361,163,362,259,665,565,566,666-669,700,164,464,465,567,711,165,568,721,166,
671,167,722,261,168,731,169,732,262,263,363,364,466,672,264,467,733,365,569,741,171,
172,265,571,173,366,673,367,742,266,674,468,743,368,744,469,751,174,471,175,572,267,
752,268,753,369,754,472,269,755,573,371,176,675,574,473,372,271,177,761,178,762,272,
273,373,374,474,475,575,576,676,677,763,375,577,764,476,678,765,578,766,679,771,179,
772,274,477,773,376,681,181,182,275,579,774,478,775,581,183,377,776,682,276,683,378,
777-779,800,184,479,811,185,582,277,781,186,684,481,187,782,278,821,188,822,279,831,
189,832,281,191,192,282,283,379,833,381,193,382,284,482,285,583,383,384,483,385,584,
484,485,585,586,685,587,783,386,686,687,784,486,688,841,194,487,785,588,842,286,689,
843,387,786,691,195,589,844,488,851,196,692,287,787,788,852,288,853,388,854,489,855,
591,197,789,861,198,862,289,863,389,864,491,199,865,592,291,1000,292,293,391,1001,
294,492,295,593,392,296,693,393,394,493,395,594,494,495,595,596,694,496,695,597,791,
1002,297,792,298,866,696,697,793,396,698,871,1003,397,794,497,795,598,872,299,873,
398,874,498,875,599,876,699,877,796,1004,499,881,1005,797,798,882,1006,799,883,399,
884,1007,885,1008,886,1009,887,1100,888,889,900,891,1111,892,1112,893,1113,894,1114,
895,1115,896,1116,897,1117,898,899,911,921,1118,922,931,1119,932,1121,1122,933,941,
1123,942,1124,943,1125,944,951,1126,952,1127,953,1128,954,1129,955,961,1131-1133,962,
1134,963,1135,964,1136,965,1137,966,971,1138,972,1139,973,1141-1144,974,1145,975,1146,
976,1147,977,981,1148,982,1149,983,1151-1155,984,1156,985,1157,986,1158,987,1159,988,
991,1161-1166,992,1167,993,1168,994,1169,995,1171-1177,996,1178,997,1179,998,1181-1188,
999,1189,1191-1199,2000,1200,1211,1221,1222,2001,1223,2002-2009,2100,1224,2111,1225,
2112-2119,2200,1226,2211,1227,2221,1228,2222-2229,2231,1229,2232-2239,2241,1231,1232,
2242-2249,2251,1233,2252-2259,2261,1234,2262-2269,2271,1235,2272-2279,2281,1236,2282-2289,
2291,1237,2292-2299,3000,1238,3001,1239,3002,2300,1241,1242,2311,1243,3003-3009,3100,
1244,3111,1245,3112,2321,1246,3113-3119,3200,1247,3211,1248,3221,1249,3222,2322,2331,
1251,1252,2332,2333,3223-3229,3300,1253,3311,1254,3321,1255,3322,2334,3331,1256,3332,
2335,3333-3339,3341,1257,3342,2336,3343-3349,3351,1258,3352,2337,3353-3359,3361,1259,
3362,2338,3363-3369,3371,1261,1262,2339,3372,2341,1263,3373-3379,3381,1264,3382,2342,
2343,3383-3389,3391,1265,3392,2344,3393-3399,4000,1266,4001,1267,4002,2345,4003,3400,
1268,4004-4009,4100,1269,4111,1271,1272,2346,4112,2347,4113,3411,1273,3421,1274,4114-4117,...

Relations: GT LE [3 digits in Sl are NOT such that $d > e \Leftarrow f$] - [does the sequence stop with 32?]

[Sl] = 1,2,3,4,5,6,7,8,9,32 stop?

Relations: GT GT [3 digits in Sm are NOT such that $d > e > f$] - [1000 terms and 97 compressions]:

[Sm] = 1-9,11,10,12-19,22,20,21,23-29,33,30-32,34-39,44,40-43,45-49,55,50-54,56-59,66,
60-65,67-69,77,70-76,78,79,88,80-87,89-99,110,100-102,111,103,112-120,104,121,105,
122-130,106,131,107,132,200,108,133-140,109,141,142,201,143,300,144-152,202,153,301,
154,400,155-162,203,163,302,164,401,165,500,166-172,204,173,303,174,402,175,501,176,
600,177-182,205,183,304,184,403,185,502,186,601,187,700,188-192,206,193,305,194,404,
195,503,196,602,197,701,198,800,199,220,207,221,208,222,209,223-230,211-213,231,214,
232,215,233-240,216,241,217,242,218,243,306,244-250,219,251-253,307,254,405,255-263,
308,264,406,265,504,266-273,309,274,407,275,505,276,603,277-283,311,284,408,285,506,
286,604,287,702,288-293,312,294,409,295,507,296,605,297,703,298,801,299,330,313,314,
331,315,332,316,333,317,334-340,318,341,319,342,322-324,343,325,344-350,326,351,327,
352,328,353,329,354,411,355-364,412,365,508,366-374,413,375,509,376,606,377-384,414,
385,511,386,607,387,704,388-394,415,395,512,396,608,397,705,398,802,399,440,416,441,
417,442,418,443,419,444,422-425,445-450,426,451,427,452,428,453,429,454,433-435,455-460,
436,461,437,462,438,463,439,464,465,513,466-475,514,476,609,477-485,515,486,611,487,
706,488-495,516,496,612,497,707,498,803,499,550,517,551,518,552,519,553,522-526,554,
527,555,528,556-560,529,561,533-536,562,537,563,538,564,539,565,544-546,566-570,547,
571,548,572,549,573-576,613,577-586,614,587,708,588-596,615,597,709,598,804,599,660,
616,617,661,618,662,619,663,622-627,664,628,665,629,666,633-637,667-670,638,671,639,
672,644-647,673,648,674,649,675,655-657,676,658,677-680,659,681-687,711,688-697,712,
698,805,699,770,713-718,771,719,772,722-728,773,729,774,733-738,775,739,776,744-748,
777,749,778-780,755-758,781,759,782,766-768,783,769,784-798,806,799,880,807-809,881,
811-819,882,822-829,883,833-839,884,844-849,885,855-859,886,866-869,887,877-879,888-909,
911-919,922-929,933-939,944-949,955-959,966-969,977-979,988-999,1100,1000-1002,1101,
1003,1102-1110,1004,1111,1005,1112-1120,1006,1121,1007,1122-1130,1008,1131,1009,1132,
2000,1010-1012,1133-1140,1013,1141,1014,1142,2001,1015,1143,3000,1016,1144-1150,1017,
1151,1018,1152,2002,1153,3001,1019,1154,4000,1020-1022,1155-1160,1023,1161,1024,1162,
2003,1163,3002,1164,4001,1025,1165,5000,1026,1166-1170,1027,1171,1028,1172,2004,1173,
3003,1174,4002,1175,5001,1029,1176,...

Relations: GT GE [3 digits in Sn are NOT such that $d > e \Rightarrow f$] - [1000 terms and 85 compressions]:

[Sn] = 1-9,12-19,23-29,34-39,45-49,56-59,67-69,78,79,89,90,10,11,20-22,30-33,40-44,50-55,

60-66,70-77,80-88,91-99,120,101,102,121,201,103,122-130,104,131,202,132,301,105,133-140,
106,141,203,142,302,143,401,107,144-150,108,151,204,152,303,153,402,154,501,109,155-160,
110-112,161,205,162,304,163,403,164,502,165,601,113,166-170,114,171,206,172,305,173,
404,174,503,175,602,176,701,115,177-180,116,181,207,182,306,183,405,184,504,185,603,
186,702,187,801,117,188-190,118,191,208,192,307,193,406,194,505,195,604,196,703,197,
802,198,901,119,199,230,209,231,212,213,232,308,233-240,214,241,215,242,309,243,407,
244-250,216,251,217,252,312,218,253,408,254,506,255-260,219,261,220-223,262,313,263,
409,264,507,265,605,266-270,224,271,225,272,314,273,412,226,274,508,275,606,276,704,
277-280,227,281,228,282,315,283,413,284,509,285,607,286,705,287,803,288-290,229,291,
292,316,293,414,294,512,295,608,296,706,297,804,298,902,299,340,317,341,318,342,319,
343,415,344-350,323,324,351,325,352,326,353,416,354,513,327,355-360,328,361,329,362,
330-334,363,417,364,514,365,609,366-370,335,371,336,372,337,373,418,374,515,375,612,
338,376,707,377-380,339,381-383,419,384,516,385,613,386,708,387,805,388-393,423,394,
517,395,614,396,709,397,806,398,903,399,450,424,425,451,426,452,427,453,428,454,518,
455-460,429,461,434,435,462,436,463,437,464,519,465,615,466-470,438,471,439,472,440-445,
473,446,474,523,447,475,616,476,712,448,477-480,449,481-484,524,485,617,486,713,487,
807,488-494,525,495,618,496,714,497,808,498,904,499,560,526,561,527,562,528,563,529,
564,534-536,565,619,566-570,537,571,538,572,539,573,545,546,574,547,575,623,548,576,
715,549,577-580,550-556,581,557,582,558,583,559,584,585,624,586,716,587,809,588-595,
625,596,717,597,812,598,905,599,670,626,627,671,628,672,629,673,634-637,674,638,675,
639,676,718,677-680,645-647,681,648,682,649,683,656,657,684,658,685,659,686,719,687,
813,660-667,688-690,668,691,669,692-696,723,697,814,698,906,699,780,724-728,781,729,
782,734-738,783,739,784,745-748,785,749,786,756-758,787,815,759,788-790,767,768,791,
769,792,770-778,793,779,794-797,816,798,907,799,890,817-819,891,823-829,892,834-839,
893,845-849,894,856-859,895,867-869,896,878,879,897,880-889,898,908,899,909,912-919,
923-929,934-939,945-949,956-959,967-969,978,979,989-999,1201,1010-1012,1202-1209,1212-1220,
1013,1221,2010,1014,1222-1230,1015,1231,2011,1016,1232,3010,1017,1233-1240,1018,1241,
2012,1242,3011,1019,1243,4010,1020,1021,2013,1244-1250,1022,1251,2014,1252,3012,1253,
4011,1023,1254,5010,1024,1255-1260,1025,1261,2015,1262,3013,1263,4012,1264,5011,1026,
1265,6010,1027,1266-1270,1028,1271,2016,1272,3014,1273,4013,1274,5012,1275,6011,1029,
1276,7010,1030,1031,2017,1277-1280,1032,3015,1281,2018,1282,3016,1283,4014,1284,5013,
1285,6012,1286,7011,1033,1287,8010,1034,1288-1290,1035,1291,2019,1292,3017,1293,4015,
1294,5014,1295,6013,1296,7012,1297,8011,1036,1298,9010,1037,1299,1301,1038,...

Relations: GT EQ [3 digits in So are NOT such that $d > e = f$] - [1000 terms and 93 compressions]:

[So] = 1-99,101-109,120,110-112,121,201,113,122-130,114,131,202,132-140,115,141,203,
142-150,116,151,204,152-160,117,161,205,162-170,118,171,206,172-180,119,181,207,182-191,
208,192-199,209,210,212-219,230,220-223,231,224,232,301,225,233-240,226,241,227,242,
302,228,243-250,229,251,252,303,253-262,304,263-272,305,273-282,306,283-292,307,293-299,
308-310,312-321,323-329,340,330-334,341,335,342,336,343,401,337,344-350,338,351,339,
352,353,402,354-363,403,364-373,404,374-383,405,384-393,406,394-399,407-410,412-421,
423-432,434-439,450,440-445,451,446,452,447,453,448,454,501,449,455-464,502,465-474,
503,475-484,504,485-494,505,495-499,506-510,512-521,523-532,534-543,545-549,560,550-556,
561,557,562,558,563,559,564,565,601,566-575,602,576-585,603,586-595,604,596-599,605-610,
612-621,623-632,634-643,645-654,656-659,670,660-667,671,668,672,669,673-676,701,677-686,
702,687-696,703,697-699,704-710,712-721,723-732,734-743,745-754,756-765,767-769,780,
770-778,781,779,782-787,801,788-797,802,798,799,803-810,812-821,823-832,834-843,845-854,
856-865,867-876,878,879,890,880-889,891-898,901,899,902-910,912-921,923-932,934-943,
945-954,956-965,967-976,978-987,989-999,1010-1021,2010,1022-1031,2011,1032-1041,2012,
1042-1051,2013,...

Relations: GE LT [3 digits in Sp are NOT such that $d > e = f$] - [sequence is extended with lots of 1's]:

[Sp] = 1,2,3,4,5,6,7,8,9,11,111,1111,11111,111111,...

Relations: GE LE [3 digits in Sq are NOT such that $d \geq e \leq f$] - [does the sequence stop with 32?]

[Sq] = 1,2,3,4,5,6,7,8,9,32 stop?

Relations: GE GT [3 digits in Sr are NOT such that $d \geq e > f$] - [sequence is extended with lots of 9's]:

[Sr =] 1-9,11-19,22-29,33-39,44-49,55-59,66-69,77-79,88,89,99,999,9999,99999,999999,9999999,...

Relations: GE GE [3 digits in Ss are NOT such that $d \geq e \geq f$] - [1000 terms and 63 compressions]:

[Ss] = 1-9,12-19,23-29,34-39,45-49,56-59,67-69,78,79,89,120,10,11,20-22,30-33,40-44,
50-55,60-66,70-77,80-88,90-98,901,121,201,122,301,123-130,101,131,202,132,302,133,
401,134-140,102,141,203,142,303,143,402,144,501,145-150,103,151,204,152,304,153,403,
154,502,155,601,156-160,104,161,205,162,305,163,404,164,503,165,602,166,701,167-170,
105,171,206,172,306,173,405,174,504,175,603,176,702,177,801,178-180,106,181,207,182,
307,183,406,184,505,185,604,186,703,187,802,188,902,189,190,107,191,208,192,308,193,
407,194,506,195,605,196,704,197,803,198,903,230,108,231,209,232,309,233,408,234-240,
109,241,212,242,312,243,409,244,507,245-250,112,251,213,252,313,253,412,254,508,255,
606,256-260,113,261,214,262,314,263,413,264,509,265,607,266,705,267-270,114,271,215,
272,315,273,414,274,512,275,608,276,706,277,804,278-280,115,281,216,282,316,283,415,
284,513,285,609,286,707,287,805,288,904,289,290,116,291,217,292,317,293,416,294,514,
295,612,296,708,297,806,298,905,340,117,341,218,342,318,343,417,344,515,345-350,118,
351,219,352,319,353,418,354,516,355,613,356-360,119,361,223,362,323,363,419,364,517,
365,614,366,709,367-370,224,371,225,372,324,373,423,374,518,375,615,376,712,325,377,
807,378-380,226,381,227,382,326,383,424,384,519,385,616,386,713,387,808,388,906,389,
390,228,391,229,392,327,393,425,394,523,395,617,396,714,397,809,398,907,450,328,451,
329,452,334,453,426,454,524,455,618,456-460,335,461,336,462,337,463,427,464,525,465,
619,466,715,467-470,338,471,339,472,428,473,429,474,526,475,623,434,476,716,477,812,
435,478-480,436,481,437,482,438,483,439,484,527,485,624,486,717,487,813,445,488,908,
489,490,446,491,447,492,448,493,449,494,528,495,625,496,718,497,814,498,909,560,529,
561,534,535,562,536,563,537,564,538,565,626,566,719,567-570,539,571,545,572,546,573,
547,574,548,575,627,576,723,549,577,815,578-580,556,581,557,582,558,583,559,584,585,
628,586,724,587,816,588,912,589-595,629,596,725,597,817,598,913,634-636,670,637,671,
638,672,639,673,645,646,674,647,675,648,676,726,677,818,678-680,649,681,656,682,657,
683,658,684,659,685,667,686,727,687,819,688,914,668,689,690,669,691-696,728,697,823,

698,915,729,780,734-737,781,738,782,739,783,745-747,784,748,785,749,786,756,757,787,
824,758,788,916,759,789,790,767,791,768,792,769,793,778,794,779,795-797,825,798,917,
826-828,890,829,891,834-838,892,839,893,845-848,894,849,895,856-858,896,859,897,867,
868,898,918,919,1201,869,1202,878,923,879,1203,889,1204,924-929,1205,934-939,1206,
945-949,1207,956-959,1208,967-969,1209,1212,978,979,1213,989,1214-1219,1223-1230,1010,
1011,2010,1012,1231,2011,2012,1232,3010,1013,1233,4010,1014,1234-1240,1015,1241,2013,
1242,3011,2014,1243,4011,2015,1244,5010,1016,1245-1250,1017,1251,2016,1252,3012,1253,
4012,1254,5011,2017,1255,6010,1018,1256-1260,1019,1261,2018,1262,3013,1263,4013,1264,
5012,1265,6011,2019,1266,7010,1020,1021,2020,1022,3014,1267-1270,1023,1271,2021,2022,
3015,1272,3016,1273,4014,1274,5013,1275,6012,1276,7011,2023,1277,8010,1024,1278-1280,
1025,1281,2024,1282,3017,1283,4015,1284,5014,1285,6013,1286,7012,1287,8011,2025,1288,
9010,1026,1289,1290,1027,1291,2026,1292,3018,1293,4016,1294,5015,1295,6014,1296,7013,
1297,8012,1298,9011,2027,1301-1309,1312-1319,1323-1329,1334-1340,1028,1341,2028,1342,
3019,1343,4017,1344,5016,1345-1350,1029,1351,2029,1352,3020,1030,1031,2030,1032,3021,
2031,2032,3022,3023,1353,4018,1354,5017,...

Relations: GE EQ [3 digits in St are NOT such that $d \geq e = f$] - [1000 terms and 105 compressions]:

[St] = 1-11,20,12-19,21,22,30,23-29,31-33,40,34-39,41-44,50,45-49,51-55,60,56-59,61-66,
70,67-69,71-77,80,78,79,81-88,90,89,91-99,101-109,120,110,112,121,201,122-130,113,
131,202,132-140,114,141,203,142-150,115,151,204,152-160,116,161,205,162-170,117,171,
206,172-180,118,181,207,182-190,119,191,208,192-199,209,210,212-219,230,220,221,223,
231,224,232,301,225,233-240,226,241,227,242,302,243-250,228,251,229,252,303,253-262,
304,263-272,305,273-282,306,283-292,307,293-299,308-310,312-321,323-329,340,330-332,
334,341,335,342,336,343,401,337,344-350,338,351,339,352,353,402,354-363,403,364-373,
404,374-383,405,384-393,406,394-399,407-410,412-421,423-432,434-439,450,440-443,445,
451,446,452,447,453,448,454,501,449,455-464,502,465-474,503,475-484,504,485-494,505,
495-499,506-510,512-521,523-532,534-543,545-549,560,550-554,556,561,557,562,558,563,
559,564,565,601,566-575,602,576-585,603,586-595,604,596-599,605-610,612-621,623-632,
634-643,645-654,656-659,670,660-665,667,671,668,672,669,673-676,701,677-686,702,687-696,
703,697-699,704-710,712-721,723-732,734-743,745-754,756-765,767-769,780,770-776,778,
781,779,782-787,801,788-797,802,798,799,803-810,812-821,823-832,834-843,845-854,856-865,
867-876,878,879,890,880-887,889,891-898,901,899,1010,902-910,912-921,923-932,934-943,
945-954,956-965,967-976,978-987,989,1011,990-998,1012-1021,2010,1022-1031,2011,2012,
1032-1041,2013,1042-1051,2014,1052-1059,...

Relations: EQ LT [3 digits in Su are NOT such that $d = e < f$] - [1000 terms and 99 compressions]:

[Su] = 1-11,101,20,12-19,21,22,102,30,23-29,31-33,103,40,34-39,41-44,104,50,45-49,51-55,
105,60,56-59,61-66,106,70,67-69,71-77,107,80,78,79,81-88,108,90,89,91-99,109-111,1010,
120,121,201,202,122-131,203,132-141,204,142-151,205,152-161,206,162-171,207,172-181,
208,182-191,209,192-199,210,211,1011,1012,212-222,1013,230-232,301,233-242,302,303,
243-252,304,253-262,305,263-272,306,273-282,307,283-292,308,293-299,309-311,1014,312-322,
1015,323-333,1016,340-343,401,344-353,402,354-363,403,404,364-373,405,374-383,406,
384-393,407,394-399,408-411,1017,412-422,1018,423-433,1019,434-444,1020,450-454,501,
455-464,502,465-474,503,475-484,504,505,485-494,506,495-499,507-511,1021,512-522,1022,
1023,523-533,1024,534-544,1025,545-555,1026,560-565,601,566-575,602,576-585,603,586-595,
604,596-599,605-611,1027,612-622,1028,623-633,1029,634-644,1030,645-655,1031,656-666,
1032,670-676,701,677-686,702,687-696,703,697-699,704-711,1033,1034,712-722,1035,723-733,
1036,734-744,1037,745-755,1038,756-766,1039,767-777,1040,780-787,801,788-797,802,798,
799,803-811,1041,812-822,1042,823-833,1043,834-844,1044,1045,845-855,1046,856-866,
1047,867-877,1048,878-888,1049,890-898,901,899,902-911,1050,912-922,1051,923-933,1052,
934-944,1053,945-955,1054,956-966,1055,1056,967-977,1057,978-988,1058,989-996,...

Relations: EQ LE [3 digits in Sv are NOT such that $d = e \leq f$] - [1000 terms and 94 compressions]:

[Sv] = 1-10,12-22,101,23-33,102,34-44,103,45-55,104,56-66,105,67-77,106,78-88,107,89-99,
108-110,120,121,201,202,122-131,203,132-141,204,142-151,205,152-161,206,162-171,207,
172-181,208,182-191,209,192-199,210,212-221,230-232,301,233-242,302,303,243-252,304,
253-262,305,263-272,306,273-282,307,283-292,308,293-299,309,310,312-322,1010,323-332,
340-343,401,344-353,402,354-363,403,404,364-373,405,374-383,406,384-393,407,394-399,
408-410,412-422,1012,423-433,1013,434-443,450-454,501,455-464,502,465-474,503,475-484,
504,505,485-494,506,495-499,507-510,512-522,1014,523-533,1015,534-544,1016,545-554,
560-565,601,566-575,602,576-585,603,586-595,604,596-599,605-610,612-622,1017,623-633,
1018,634-644,1019,645-655,1020,656-665,670-676,701,677-686,702,687-696,703,697-699,
704-710,712-722,1021,723-733,1022,1023,734-744,1024,745-755,1025,756-766,1026,767-776,
780-787,801,788-797,802,798,799,803-810,812-822,1027,823-833,1028,834-844,1029,845-855,
1030,856-866,1031,867-877,1032,878-887,890-898,901,899,1033,1034,902-910,912-922,1035,
923-933,1036,934-944,1037,945-955,1038,956-966,1039,967-977,1040,978-988,1041,989,
1042,990-998,1043-1074,...

Relations: EQ GT [3 digits in Sw are NOT such that $d = e > f$] - [sequence is extended with lots of 9's]:

[Sw] = 1-89,99,999,9999,99999,999999,9999999,...

Relations: EQ GE [3 digits in Sx are NOT such that $d = e \geq f$] - [1000 terms and 102 compressions]:

[Sx] = 1-11,20,12-19,21,22,30,23-29,31-33,40,34-39,41-44,50,45-49,51-55,60,56-59,61-66,
70,67-69,71-77,80,78,79,81-88,90,89,100,91-98,101,120,102-109,112-119,121,122,300,
123-133,400,134-144,500,145-155,600,156-166,700,167-177,800,178-188,900,189-198,200-202,
230,203-212,231,213-219,223-229,232,233,401,234-244,501,245-255,601,256-266,701,267-277,
801,278-288,901,289-298,301-303,340,304-313,341,314-323,342,324-329,334-339,343,344,
502,345-355,602,356-366,702,367-377,802,378-388,902,389-398,402-404,450,405-414,451,
415-424,452,425-434,453,435-439,445-449,454,455,603,456-466,703,467-477,803,478-488,
903,489-498,503-505,560,506-515,561,516-525,562,526-535,563,536-545,564,546-549,556-559,
565,566,704,567-577,804,578-588,904,589-598,604-606,670,607-616,671,617-626,672,627-636,
673,637-646,674,647-656,675,657-659,667-669,676,677,805,678-688,905,689-698,705-707,
780,708-717,781,718-727,782,728-737,783,738-747,784,748-757,785,758-767,786,768,769,
778,779,787,788,906,789-798,890,806-808,891,809-818,892,819-828,893,829-838,894,839-848,
895,849-858,896,859-868,897,869-878,898,907,879,889,1001,908,909,1002,910-919,1003,
920-929,1004,930-939,1005,940-949,1006,950-959,1007,960-969,1008,970-979,1009,1010,

980-989,1011,2001,1200,1012-1021,1201,1202,1022,3001,1203,1023-1031,1204,1032,1033,
4001,1205,1034-1041,1206,1042-1044,5001,1207,1045-1051,1208,...

Relations: EQ EQ [3 digits in Sy are NOT such that $d = e = f$] - [1000 terms and 25 compressions]:

[Sy] = 1-11,20,12-19,21,22,30,23-29,31-33,40,34-39,41-44,50,45-49,51-55,60,56-59,61-66,
70,67-69,71-77,80,78,79,81-88,90,89,91-110,112-221,223-332,334-443,445-554,556-665,
667-776,778-887,889-899,1001,900-989,1002,990-998,1003-1010,...

[Maximilian Hasler]:

Est-il logique de commencer avec 1 ? Si l'on autorise des digits 0, pourquoi pas $a(0)=0$?

Alors un problème qui survient certainement aussi dans l'autre cas, arrive tout de suite : le début 0,1 est impossible dans le cas du " $\leq$ "

Donc il faut commencer 0,2,1,3, - ... à nouveau problème ! Mais ici on s'en sort grâce aux nombres à plusieurs chiffres : 0,2,1,3,10,4,11, - ... encore problème ! Et là on ne peut faire autrement que revenir sur notre choix !

Donc pas de "greedy solution"...

M.

Many thanks, Lars and Maximilian!

Best,

É.