

Cinquante signes

Go down, go up, go flat integers



août 26, 2023



NAME

Each term is a "Go down integer", GDI in short, but $a(n) + a(n+1)$ is always a "Go up integer" (GUI). More details in the Comments section.

DATA

10, 92, 20, 82, 21, 81, 31, 71, 32, 70, 42, 60, 43, 61, 41, 62, 40, 63, 50, 52, 51, 53, 54, 64, 65, 72, 30, 73, 74, 75, 80, 76, 83, 84, 85, 87, 86, 90, 93, 91, 94, 95, 97, 96, 98, 100, 902, 110, 892, 120, 882, 130, 872, 140, 862, 150, 852, 160, 842, 170, 832, 180, 822, 190, 812, 200, 802, 201, 801, 211, 791, 221, 781, 231, 771, 241, 761, 251, 751, 261, 741, 271, 731, 281, 721, 291, 711, 301, 701, 302, 700, 312, 690, 322, 680, 332, 670, 342, 660, 352,...

COMMENTS

The rightmost digit R of a GDI is always smaller than the leftmost digit L of the same GDI. The first such integer is 10, as we need at least two digits for a sound GDI. Accordingly, the R of a GUI is always larger than its L - the first such integer being 12. When $R = L$ we have a "Go flat integer", or GFI. We admit that 0 is the first GFI (followed by 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 22, 33, 44, 55, 66, 77, 88, 99, 101, 111, 121, etc.) This sequence is the lexicographically earliest of distinct nonnegative terms with this property, starting with $a(1) = 10$.

EXAMPLE

$$a(1) + a(2) = 10 + 92 = 102 \text{ (a GUI);}$$

$$a(2) + a(3) = 92 + 20 = 112 \text{ (a GUI);}$$

$$a(3) + a(4) = 20 + 82 = 102 \text{ (a GUI);}$$

$$a(4) + a(5) = 82 + 21 = 103 \text{ (a GUI);}$$

$$a(5) + a(6) = 21 + 81 = 102 \text{ (a GUI); etc.}$$

XREF

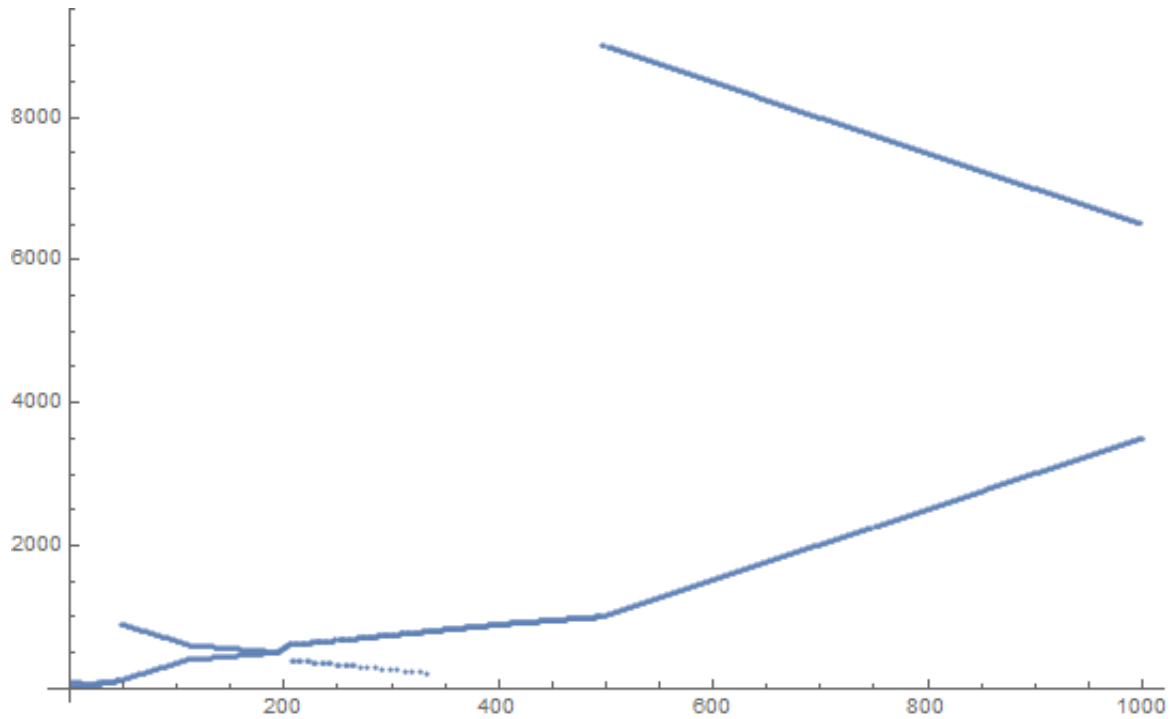
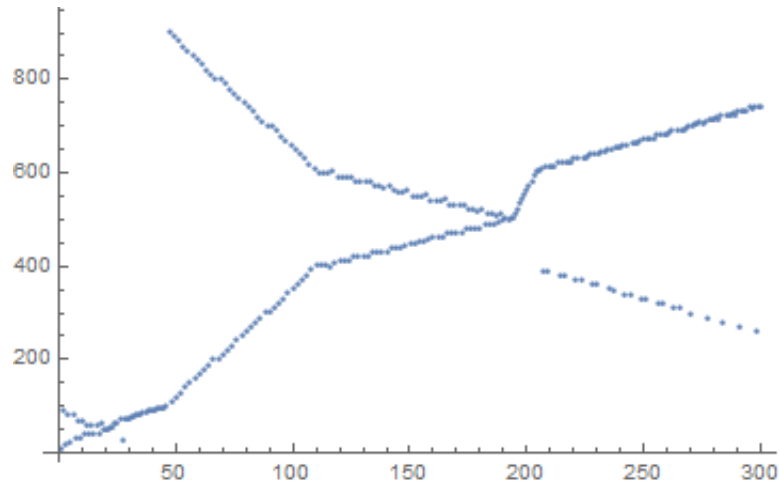
[A336611](#)

August 27th **update**

This idea is now [in the OEIS](#).

And Giorgos **Kalogeropoulos** was again quick to correct my data and extend the sequence – many thanks, Giorgos!

He sent me the hereunder fractal images of the first 300 and 1000 terms – what a delight!



Our next submissions to the OEIS are obvious variants of the above sequence:

VARIANT #1 NAME

Each term is a "Go up integer" (GUI), but $a(n) + a(n+1)$ is always a "Go down integer" (GDI). More details in the Comments section.

DATA

12, 18, 13, 17, 14, 16, 15, 25, 26, 24, 19, 23, 27, 34, 28, 35, 29, 36, 37, 38, 45, 39, 46, 47, 48,
49, 152, 58, 102, 68, 112, 78, 122, 79, 132, 69, 142, 59, 162, 89, 172, 108, 103, 57, 113, 67, 123,
107, 104, 56, 114, 106, 105, 115, 116, 124, 117, 133, 118, 143, 127, 134, 126, 125, 135, 136, 144,

137, 153, 128, 163, 138, 164, 146, 145, 155, 147, 154, 148, 173, 129, 182, ...

COMMENTS

The rightmost digit R of a GUI is always larger than the leftmost digit L of the same GUI. The first such integer is 12, as we need at least two digits for a sound GUI. Accordingly, the R of a GDI is always smaller than its L - the first such integer being 10. When $R = L$ we have a "Go flat integer", or GFI. We admit that 0 is the first GFI (followed by 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 22, 33, 44, 55, 66, 77, 88, 99, 101, 111, 121, etc.) This sequence is the lexicographically earliest of distinct nonnegative terms with this property, starting with $a(1) = 12$.

EXAMPLE

$a(1) + a(2) = 12 + 18 = 30$ and 30 is a GDI;
 $a(2) + a(3) = 18 + 13 = 31$ and 31 is a GDI;
 $a(3) + a(4) = 13 + 17 = 30$ and 30 is a GDI;
 $a(4) + a(5) = 17 + 14 = 31$ and 31 is a GDI;
 $a(5) + a(6) = 14 + 16 = 30$ and 30 is a GDI; etc.

XREF

A365217

This sequence was submitted [here](#) to the OEIS.



VARIANT #2 NAME

Each term is a "Go flat integer" (GFI), but $a(n) + a(n+1)$ is always a "Go up integer" (GUI). More details in the Comments section.

DATA

1, 11, 2, 22, 3, 9, 4, 8, 5, 7, 6, 33, 99, 44, 88, 55, 77, 66, 101, 1001, 111, 898, 121, 888, 131, 878, 141, 868, 151, 858, 161, 848, 171, 838, 181, 828, 191, 818, 404, 808, 414, 595, 424, 585, 434, 575, 444, 565, 454, 555, 464, 545, 474, 535, 484, 525, 494, 515, 707, 505, 717, 292, 727, 282, 737, 272, 747, 262, 757, 252, 767, 242, 777, 232, 787, 222, 797, 212, 1011, 202, 1021 ...

COMMENTS

The rightmost digit R of a GUI is always larger than the leftmost digit L of the same GUI. The first such integer is 12, as we need at least two digits for a sound GUI. When $R = L$ we have a "Go flat integer", or GFI. We admit that 0 is the first GFI (followed by 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 22, 33, 44, 55, 66, 77, 88, 99, 101, 111, 121, etc.) This sequence is the lexicographically earliest of distinct nonnegative terms with this property, starting with $a(1) = 1$.

EXAMPLE

$a(1) + a(2) = 1 + 11 = 12$ and 12 is a GUI;

$a(2) + a(3) = 11 + 2 = 13$ and 13 is a GUI;
 $a(3) + a(4) = 2 + 22 = 24$ and 24 is a GUI;
 $a(4) + a(5) = 22 + 3 = 25$ and 25 is a GUI;
 $a(5) + a(6) = 3 + 9 = 12$ and 12 is a GUI; etc.

XREF

A365217, A365219.

This sequence was submitted [here](#) to the OEIS.



VARIANT #3 NAME

Each term is a "Go flat integer" (GFI), but $a(n) + a(n+1)$ is always a "Go down integer" (GDI). More details in the Comments section.

DATA

1, 9, 11, 99, 101, 909, 2, 8, 22, 88, 3, 7, 33, 77, 4, 6, 44, 66, 5, 55, 505, 515, 191, 111, 292, 121, 181, 131, 171, 141, 161, 151, 252, 262, 242, 272, 232, 282, 222, 383, 323, 393, 212, 494, 313,

595, 333, 373, 343, 363, 353, 454, 464, 444, 474, 434, 484, 424, 606, 404, 616, 414, 626,
4004, 636, 4014, 646, 4024, 656, 4034, ...

COMMENTS

The rightmost digit R of a GDI is always smaller than the leftmost digit L of the same GDI. The first such integer is 10, as we need at least two digits for a sound GDI. When $R = L$ we have a "Go flat integer", or GFI. We admit that 0 is the first GFI (followed by 1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 22, 33, 44, 55, 66, 77, 88, 99, 101, 111, 121, etc.) This sequence is the lexicographically earliest of distinct nonnegative terms with this property, starting with $a(1) = 1$.

EXAMPLE

$a(1) + a(2) = 1 + 9 = 10$ and 10 is a GDI;
 $a(2) + a(3) = 9 + 11 = 20$ and 20 is a GDI;
 $a(3) + a(4) = 11 + 99 = 110$ and 110 is a GDI;
 $a(4) + a(5) = 99 + 101 = 200$ and 200 is a GDI;
 $a(5) + a(6) = 101 + 909 = 1010$ and 1010 is a GDI; etc.

XREF

A365217, A365219, A365220.

This last variant was submitted [here](#) to the OEIS.

Many thanks again to Giorgos **Kalogeropoulos** for the data corrections (on the four sequences of this page).



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A square for three (chess)

juin 22, 2024



(English translation after the French text) Voici cinq problèmes d'échecs disjoints : a) combien faut-il de coups au minimum pour que trois pions soient capturés sur la même case ? b) trois tours c) trois c ...

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Le tripalin se présente

avril 11, 2024



Un tripalin est constitué de trois images. Chaque image illustre un substantif. Accolés, ces trois substantifs forment une chaîne palindromique. Laquelle nous vous invitons à trouver. Exer ...

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Some strings au cinéma Galeries

juillet 19, 2024

Lettre ouverte au cinéma Galeries Bonsoir à tous, Je viens de voir pour la seconde fois chez vous le beau film de Léos Carax (la première fois c'était le 26 juin en présence du réalisateur, au BRIFF). Apparut à l'écran aujourd'hui, avant la projection propre ...

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Images de thèmes de [Michael Elkan](#)





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