https://oeis.org/history?seq=A282251&start=30

Revision History for A282251

(Underlined text is an addition; strikethrough text is a ~~deletion~~.)

newer changes | Showing entries 31-31

A282251 Even integers not of the form p + prime(prime(q)) with distinct summands, where p and q are prime.
(history; edit; published version)

#1 by Andrei-Lucian Dragoi at Fri Feb 10 04:13:11 EST 2017

NAME allocated for Andrei-Lucian Dragoi

KEYWORD allocated

STATUS approved

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https://oeis.org/history?seq=A282251&start=20

newer changes | Showing entries 21-30 | older changes

A282251 Even integers not of the form p + prime(prime(q)) with distinct summands, where p and q are prime.
(history; edit; published version)

#11 by Michael De Vlieger at Sat Feb 11 15:32:10 EST 2017

STATUS ~~editing~~
proposed

#10 by Michael De Vlieger at Sat Feb 11 15:32:04 EST 2017

MATHEMATICA
```
Function[s, TakeWhile[Select[Complement[Range@ Max@ #, #],
  EvenQ], # < Max@ s &] &@ Union@ Map[Total, DeleteCases[
  Tuples[ {Prime@ Range@ PrimePi@ Max@ s, s}], t  /;
  Differences@ t == {0}]]]@ Map[Nest[Prime, #, 2] &, Prime@
  Range@ 240] (* Michael De Vlieger, Feb 11 2017 *)
```

STATUS ~~proposed~~
editing

#9 by Michel Marcus at Fri Feb 10 14:52:14 EST 2017

STATUS ~~editing~~
proposed

#8 by Michel Marcus at Fri Feb 10 14:49:55 EST 2017

COMMENTS It is conjectured that this sequence is finite and that its larger term is smallerthan e^8, that is e^(4m) with m=2. See links.

FORMULA ~~The largest even integer T(n) that cannot be written as T(n)=n_Px+0_Py (with n_Px<>0_Py, with x,y>1) is conjectured T(n)<e^(4n) for n>0 (for siVBGC[a,0], see links)~~

Discussion

Fri Feb 10 14:51 **Michel Marcus**: Beause formula section is usually for formula of the sequence terms.

14:52 **Michel Marcus**: Well, I think I'm done. Hope it will help.

#7 by Michel Marcus at Fri Feb 10 14:38:37 EST 2017

```
PROG    isok02(n) = forprime(p=2, n, if (p != n-p, if (isokpd(n-p)
          || (isokpc(p) && isprime(n-p)), return (0)); ); ); 1~~,~~;
        \\ _Michel Marcus_, Feb 10 2017
```

Discussion

Fri Feb 10 14:43 **Michel Marcus**: You write T(n) < e(4^n) and here it is n=2, I thought you had a more precise conjecture for the value of the "larger" term of this sequence ?

14:48 **Michel Marcus**: Ah, no I see you wrote the same thing in A281929. So just let me do another change.

#6 by Michel Marcus at Fri Feb 10 14:38:04 EST 2017

NAME Even integers that cannot be expressed as the sum of two distinct 2-(prime-indexed prime) and 0-(prime-indexed prime~~)~~.

COMMENTS ~~A 2-(prime-index-prime) (2-PIP) is noted as 2_Px=P[P(P(x))](the x-th 2_P defined by 2 P-on-P iterations). The same for the y-th 0-PIP 0_Py=P(y)(the y-th 0_P defined by 0 P-on-P iterations).~~
A 0-(prime-index-prime) (0-PIP) is simply a prime, noted here 0_Px = prime(x).
A 2-(prime-index-prime) (2-PIP) is noted as 2_Px = prime(prime(prime(x))).
~~It is conjectured that this sequence is finite.~~ No other terms up to 10^10~~. See links~~.
It is conjectured that this sequence is finite. See links.

EXAMPLE 6~~=3+3~~ cannot be written as a sum of pair of distincts terms (2_Px~~,a~~, 0_Py).

```
PROG    (PARI) isokpc(p) = isprime(primepi(p)) &&
          isprime(primepi(primepi(p)));
        isokpd(p) = isprime(p) && isprime(primepi(p)) &&
          isprime(primepi(primepi(p)));
        isok02(n) = forprime(p=2, n, if (p != n-p, if (isokpd(n-p)
          || (isokpc(p) && isprime(n-p)), return (0)); ); ); 1;
```

CROSSREFS Cf. A000040, A038580, A281929.

STATUS ~~proposed~~
editing

#5 by Andrei-Lucian Dragoi at Fri Feb 10 13:48:05 EST 2017

STATUS ~~editing~~
proposed

#4 by Andrei-Lucian Dragoi at Fri Feb 10 13:47:43 EST 2017

NAME ~~The conjectured sequence of all~~ ~~even~~Even integers that cannot be expressed as the sum of two distinct 2-(prime-indexed prime) and 0-(prime-indexed prime~~).~~)

DATA 2, 4, 6, 10, 20, 26, 32, 56, 80, 86, 116, 122, 152, 176, 214, 218, 248, 332, 382, 422, 446, 556, 586, 596, 620, 634, 904, 928, 1138, 1144, 1180, 1354, 1388, 1390, 1474, 1600, 1684, 3112, 3554, 5128

COMMENTS ~~VBGC is a meta-conjecture that has an analytical variant (aVBGC), an inductive variant (iVBGC) and also a secondary inductive variant VBGC (siVBGC[a,0]): see the links.~~
~~aVBGC, iVBGC and siVBGC[a,0] have been verified on the interval [4,10^10].~~
It is conjectured that this sequence is finite. No other terms up to 10^10. See links.

CROSSREFS ~~Cf. A000040, A006450, A038580, A049090, A049203, A049202, A057849, A057850, A057851, A057847, A058332, A093047, A002372, A002375, A281929~~
A000040, A038580, A281929

STATUS ~~proposed~~
editing

#3 by Andrei-Lucian Dragoi at Fri Feb 10 04:16:43 EST 2017

STATUS ~~editing~~
proposed

Discussion

Fri Feb 10 13:26 **Michel Marcus**: I think name should simply be : Even integers that cannot be expressed as the sum of two distinct 2-(prime-indexed prime) and 0-(prime-indexed prime).

13:27 **Michel Marcus**: In 1st comment , I would only keep 1st sentence.

13:27 **Michel Marcus**: I would remove 2nd comment.

13:29 **Michel Marcus**: In the xrefs, I would keep only A000040, A038580 and A281929

13:33 **Michel Marcus**: For the 3rd comment, I would say : It is conjectured that this sequence is finite. No other terms up to 10^10.

13:35 **Michel Marcus**: And add see links.

13:36 **Michel Marcus**: By the way why don't you have 2 and 4 in your sequence ?

13:47 **Andrei-Lucian Dragoi**: I have done all the corrections requested. I have also added 2 and 4 terms in the data sequence (my soft generated this list automatically and was initially programmed to start with 2*3, as it was initially focused on exceptions larger than 6)

#2 by Andrei-Lucian Dragoi at Fri Feb 10 04:13:11 EST 2017

NAME ~~allocated~~The conjectured sequence of all even integers that cannot be expressed ast he sum of two distinct 2-(prime-indexed ~~for~~prime) and ~~Andrei~~0-(prime-~~Lucian~~indexed ~~Dragoi~~prime).

DATA 6, 10, 20, 26, 32, 56, 80, 86, 116, 122, 152, 176, 214, 218, 248, 332, 382, 422, 446, 556, 586, 596, 620, 634, 904, 928, 1138, 1144, 1180, 1354, 1388, 1390, 1474, 1600, 1684, 3112, 3554, 5128

OFFSET 1,1

COMMENTS A 2-(prime-index-prime) (2-PIP) is noted as 2_Px=P[P(P(x))](the x-th 2_P defined by 2 P-on-P iterations). The same for the y-th 0-PIP 0_Py=P(y)(the y-th 0_P defined by 0 P-on-P iterations).
VBGC is a meta-conjecture that has an analytical variant (aVBGC), an inductive variant (iVBGC) and also a secondary inductive variant VBGC (siVBGC[a,0]): see the links.
aVBGC, iVBGC and siVBGC[a,0] have been verified on the interval [4,10^10].

LINKS A. L. Dragoi, The "Vertical" (generalization of) the Binary Goldbach's conjecture (VBGC 1.2) as applied on "iterative" primes with (recursive) prime indexes (i-primeths) (the conjecture only) (DOI: 10.13140/RG.2.2.14014.28484) (2017).
A. L. Dragoi, The "Vertical" (generalization of) the Binary Goldbach's conjecture (VBGC 1.2) as applied on "iterative" primes with (recursive) prime indexes (i-primeths) (full article) (DOI: 10.13140/RG.2.2.27963.62245) (2017).

FORMULA The largest even integer T(n) that cannot be written as T(n)=n_Px+0_Py (with n_Px<>0_Py, with x,y>1) is conjectured T(n)<e^(4n) for n>0 (for siVBGC[a,0], see links)

EXAMPLE 6=3+3 cannot be written as a sum of pair of distincts (2_Px,a 0_Py).

CROSSREFS Cf. A000040, A006450, A038580, A049090, A049203, A049202, A057849, A057850, A057851, A057847, A058332, A093047, A002372, A002375, A281929

KEYWORD ~~allocated~~ nonn,more,changed

AUTHOR Andrei-Lucian Dragoi, Feb 10 2017

STATUS ~~approved~~ editing

Discussion

Fri Feb 10 04:16 **Andrei-Lucian Dragoi**: I may also (as a new entry) a meta-sequence T(n,0) which contains all the limits of the siVBGC[a,0]: f(0,0), f(1,0), f(2,0), f(3,0), f(4,0), f(5,0). Although this meta-sequence may have conjectured elements, it also may be considered however less "ambitious" (implicitly more acceptable) than VBGC. What do you think, Mr. Michael Marcus?

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https://oeis.org/history?seq=A282251&start=10

(Underlined text is an addition; strikethrough text is a ~~deletion~~.)

newer changes | Showing entries 11-20 | older changes

A282251 Even integers not of the form p + prime(prime(q)) with distinct summands, where p and q are prime.
(history; edit; published version)

#21 by Charles R Greathouse IV at Tue Feb 14 15:50:09 EST 2017

NAME ~~Even integers that cannot be expressed as a sum p + q, where p is a 2-(prime-indexed prime) and q is a 0-(prime-indexed prime), and p != q.~~
Even integers not of the form prime(m) + prime(prime(prime(n))) with distinct summands.

COMMENTS ~~A~~Define a 0-(prime-index-prime) as a prime, and a k-(prime~~) (0~~-index-~~PIP~~prime) as anumber of the form prime(p) where p is a (k-1)-(prime-index-prime). Then theseare the even integers that cannot be expressed as a sum p + q, where p ~~simply~~is a2-(prime-indexed prime~~, noted~~), q is ~~here~~a 0~~-Px =~~-(prime-indexed prime~~(x).~~), andp != q.
~~A 2-(prime-index-prime) (2-PIP) is noted as 2_Px = prime(prime(prime(x))).~~

EXAMPLE Prime(prime(prime(1))) = prime(prime(2)) = prime(3) = 5, and prime(2) = 3, and 3 + 5 = 8, so 8 is not in this sequence.

PROG
```
isok02(n) = forprime(p=2, n, if (p != n-p, if (isokpd(n-p) || (isokpc(p) &&
isprime(n-p)), return (0~~)); ); );~~ )))); 1; \\ Michel Marcus, Feb 10 2017
```

STATUS ~~proposed~~ editing

#20 by Andrei-Lucian Dragoi at Mon Feb 13 03:21:44 EST 2017

STATUS ~~editing~~ proposed

Discussion

Mon Feb 13 13:54 **Michel Marcus**: I'm French, so my English can be approximative sometimes.

13:54 **Michel Marcus**: So you're right to follow Neil's advice.

#19 by Andrei-Lucian Dragoi at Mon Feb 13 03:21:36 EST 2017

NAME

```
Even integers that cannot be expressed
  as ~~the~~a sum p + q, where ~~of~~p ~~two~~is ~~distincta~~ 2-(prime-
  indexed prime) and q is a 0-(prime-indexed
  prime~~).~~), and p != q.
```

#18 by N. J. A. Sloane at Sun Feb 12 21:14:07 EST 2017

STATUS

```
~~proposed~~
editing
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Discussion

Mon Feb 13 03:21 **Andrei-Lucian Dragoi**: It's not me, but Mr. Michael Marcus who proposed that formulation in the definition section. Dear Mr. Sloane, I agree with your observation, but I used p+q (as x and y are already used in the comment section to design indexes of those primes), so that I have changed the definition to: "Even integers that cannot be expressed as a sum p + q, where p is a 2-(prime-indexed prime) and q is a 0-(prime-indexed prime), and p != q."

#17 by Andrei-Lucian Dragoi at Sun Feb 12 15:48:33 EST 2017

STATUS

```
~~editing~~
proposed
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Discussion

Sun Feb 12 15:50 **Andrei-Lucian Dragoi**: How can I recover all the review discussion on the other sequence of VBGC proposed (but rejected by Mr. Greathouse, under the reason of not understanding the meta-conjecture VBGC explained in my articles)?

15:57 **Michel Marcus**: Go to A281929, then history,

16:42 **Michel Marcus**: Then click in #51 to see the latest version before recycling.

21:14 **N. J. A. Sloane**: The grammar in the definition is incorrect, and that makes the definition ambiguous. Would it be correct to say: "Even integers that cannot be expressed as a sum x + y, where x is a 2-(prime-indexed prime) and y is a 0-(prime-indexed prime), and x != y."? If that is correct, please use that as the definition!

#16 by Andrei-Lucian Dragoi at Sun Feb 12 15:48:26 EST 2017

COMMENTS

```
It is also conjectured that any other sequence based on a
  pair of finite integers (m~~>~~>=0,n>=0) (containing all the
  even integers that cannot be written as a sum of distinct
  m_Px and n_Py) is also finite and that its largest term
  is always finite and smaller than a specific function
  value f(m,n). See links.
```

STATUS

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~~proposed~~
editing
```

#15 by Andrei-Lucian Dragoi at Sun Feb 12 15:47:01 EST 2017

STATUS

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~~editing~~
proposed
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Discussion

Sun Feb 12 15:47 **Andrei-Lucian Dragoi**: I have also added a small reference to VBGC in the comment section: "It is also conjectured that any other sequence based on a pair of finite integers (m>=0,n>=0) (containing all the even integers that cannot be written as a sum of distinct m_Px and n_Py) is also finite and that its largest term is always finite and smaller than a specific function value f(m,n). See links. "

#14 by Andrei-Lucian Dragoi at Sun Feb 12 15:46:56 EST 2017

COMMENTS
```
It is conjectured that this sequence is finite and that
  its ~~larger~~largest term is smaller than e^8, that is
  e^(4m) with m=2. See links.
It is also conjectured that any other sequence based on a
  pair (m>0,0) (containing all the even integers that
  cannot be written as a sum of distinct 0_Px and m_Py) is
  also finite and that its ~~larger~~largest term is always
  smaller than e^(4m). See links.
It is also conjectured that any other sequence based on a
  pair of finite integers (m>0,n>=0) (containing all the
  even integers that cannot be written as a sum of distinct
  m_Px and n_Py) is also finite and that its largest term
  is always finite and smaller than a specific function
  value f(m,n). See links.
```

STATUS
~~proposed~~
editing

#13 by Andrei-Lucian Dragoi at Sun Feb 12 15:41:47 EST 2017

STATUS
~~editing~~
proposed

Discussion

Sun Feb 12 15:43 **Andrei-Lucian Dragoi**: I have added in the comments section the general meta-conjecture for all m>0 (not only for m=0) as: "It is also conjectured that any other sequence based on a pair (m>0,0) (containing all the even integers that cannot be written as a sum of distinct 0_Px and m_Py) is also finite and that its largest term is always smaller than e^(4m). See links.". This is in fact the secondary inductive VBGC[a,0] from my article.

#12 by Andrei-Lucian Dragoi at Sun Feb 12 15:41:39 EST 2017

COMMENTS
```
It is also conjectured that any other sequence based on a
  pair (m>0,0) (containing all the even integers that
  cannot be written as a sum of distinct 0_Px and m_Py) is
  also finite and that its larger term is always smaller
  than e^(4m). See links.
```

STATUS
~~proposed~~
editing

https://oeis.org/history?seq=A282251

Showing entries 1-10 | older changes

A282251 Even integers not of the form p + prime(prime(q)) with distinct summands, where p and q are prime.
(history; edit; published version)

#31 by N. J. A. Sloane at Thu Feb 16 03:11:17 EST 2017

STATUS ~~proposed~~
approved

#30 by Charles R Greathouse IV at Thu Feb 16 03:07:49 EST 2017

STATUS ~~editing~~
proposed

#29 by Charles R Greathouse IV at Thu Feb 16 00:52:46 EST 2017

NAME Even integers not of the form p + prime(prime(q)) with distinct summands, where p and q are prime.

COMMENTS Conjecture 1: ~~this~~This sequence is finite and its largest term is smaller than 2*e^8.
Conjecture 2: ~~for~~For any m > 0, all even numbers greater than 2*e^(4m) are the sum of a prime and an m-(prime-index-prime). See links.
Conjecture 3: ~~for~~For any m >= 0 and and n >= 0, all large enough even numbers are the sum of an m-(prime-index-prime) and an n-(prime-index-prime). See links.

STATUS ~~proposed~~
editing

Discussion

Thu Feb 16 03:07 **Charles R Greathouse IV**: Quick calculations are consistent with the revised conjecture 2 for m = 1..4. The largest non-sum I find for m = 1 is 6, for m = 3 it is 251542, and for m = 4 it is 12408326.

#28 by Andrei-Lucian Dragoi at Wed Feb 15 03:08:57 EST 2017

STATUS ~~editing~~
proposed

#27 by Andrei-Lucian Dragoi at Wed Feb 15 03:07:27 EST 2017

NAME Even integers not of the form ~~prime(m) + prime(p +~~ prime(prime(~~n))) q))~~ with distinct summands~~.~~, where p and q are prime

COMMENTS Conjecture 1: this sequence is finite and its largest term is smaller than 2*e^8.
Conjecture 2: for any m > 0, all even numbers greater than 2*e^(4m) are the sum of a prime and an m-(prime-index-prime). See links.

Discussion

Wed Feb 15 03:08 **Andrei-Lucian Dragoi**: I also agree with your more concise formulation of conjecture 3.

#26 by Robert G. Wilson v at Tue Feb 14 22:50:51 EST 2017

MATHEMATICA
```
fQ[n_] := Block[{p = 1}, While[q = Prime@ Prime@ Prime@ p;
  q < n && !PrimeQ[n - q] || 2q == n, p++]; q >= n];
  Select[2 Range@ 2600, fQ] (* Robert G. Wilson v, Feb 14
  2017 *)
```

STATUS ~~proposed~~
editing

Discussion

Wed Feb 15 03:02 **Andrei-Lucian Dragoi**: Mr. Greathouse, I agree with your proposal to eliminate a layer of nesting, so that if have change the name of submission to: "Even integers not of the form p + prime(prime(q)) with distinct summands, where p and q are prime" (as requested). The other

variant (also proposed by you, I think) that I found there previously is also ok for me: "Even integers not of the form prime(m) + prime(prime(prime(n))) with distinct summands." What variant do you want, exactly?

03:07 **Andrei-Lucian Dragoi**: My mistake: I forgot to multiply with 2 (as those even integers have a superior limit in 2*f[a,b]). Conjectures 1 and 2 become: "Conjecture 1: this sequence is finite and its largest term is smaller than 2*e^8." "Conjecture 2: for any m > 0, all even numbers greater than 2*e^(4m) are the sum of a prime and an m-(prime-index-prime). See links."

#25 by Charles R Greathouse IV at Tue Feb 14 21:54:12 EST 2017

STATUS ~~editing~~
proposed

Discussion

Tue Feb 14 21:57 **Charles R Greathouse IV**: Andrei-Lucian and editors: I think this name is much more readable than earlier versions; I have preserved the earlier name as a comment so the terminology is available for the conjectures. Perhaps this variant would be better still: "Even integers not of the form p + prime(prime(q)) with distinct summands, where p and q are prime." At the cost of an additional clause it removes a layer of nesting.

#24 by Charles R Greathouse IV at Tue Feb 14 21:52:47 EST 2017

EXAMPLE Prime(2) + prime(prime(prime(1))) = 3 + prime(prime(2))
= ~~prime(~~3~~) = 5, and~~ + prime(~~2~~) = ~~3~~, and~~) = 3 + 5 = 8, so 8 is not in this sequence.

CROSSREFS Cf. A000040, A038580~~, A281929~~.

KEYWORD nonn~~,more~~,changed

STATUS ~~proposed~~
editing

Discussion

Tue Feb 14 21:54 **Charles R Greathouse IV**: I should point out that, as written, conjectures 1 and 2 are false.

#23 by Charles R Greathouse IV at Tue Feb 14 17:02:20 EST 2017

STATUS ~~editing~~
proposed

#22 by Charles R Greathouse IV at Tue Feb 14 16:01:42 EST 2017

COMMENTS Define a 0-(prime-index-prime) as a prime, and a k-(prime-index-prime) as a number of the form prime(p) where p is a (k-1)-(prime-index-prime). Then these are the even integers that cannot be expressed as~~ a sum~~ p + q, where p is a 2-(prime-indexed prime), q is a 0-(prime-indexed prime), and p != q.
~~It is conjectured that~~Conjecture 1: this sequence is finite and~~ that~~ its largest term is smaller than e^8~~, that is e^(4m) with m=2. See links~~.
~~It is also conjectured that any other sequence based on a pair (m>0,0) (containing all the even integers that cannot be written as a sum of distinct 0_Px and m_Py) is also finite and that its largest term is always smaller than e^(4m). See links.~~
~~It is also conjectured that any other sequence based on a pair of finite integers (m>=0,n>=0) (containing all the even integers that cannot be written as a sum of distinct m_Px and n_Py) is also finite and that its largest term is always finite and smaller than a specific function value f(m,n). See links.~~
Conjecture 2: for any m > 0, all even numbers greater than e^(4m) are the sum of a prime and an m-(prime-index-prime). See links.
Conjecture 3: for any m >= 0 and and n >= 0, all large enough even numbers are the sum of an m-(prime-index-prime) and an n-(prime-index-prime). See links.

LINKS A. L. Dragoi, The "Vertical" (generalization of) the Binary Goldbach's conjecture (VBGC 1.2) as applied on "iterative" primes with (recursive) prime indexes (i-primeths) (~~the conjecture only) (~~2017). DOI: 10.13140/RG.2.2.27963.62245 [<ahref="http://dragoii.~~14014~~com/VBGC_latest_extract.~~28484) (2017).~~pdf">conjectureonly]

~~A. L. Dragoi, The "Vertical" (generalization of) the Binary Goldbach's conjecture (VBGC 1.2) as applied on "iterative" primes with (recursive) prime indexes (i-primeths) (full article) (DOI: 10.13140/RG.2.2.27963.62245) (2017).~~
