

Goldbach's conjecture

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【Abstract】

I proved the Goldbach's conjecture.

Even numbers are prime numbers and prime numbers added, but it has not been proven yet whether it can be true even for a huge number (forever huge number).

All prime numbers are included in $(6n - 1)$ or $(6n + 1)$ except 2 and 3 (n is a positive integer).

All numbers are executed in hexadecimal notation. This does not change even in a huge number (forever huge number).

2 $(6n + 2)$, 4 $(6n - 2)$, 6 $(6n)$ in the figure are even numbers. 1 $(6n + 1)$, 3 $(6n + 3)$, 5 $(6n - 1)$ are odd numbers.

【Discussion】

prime numbers are $(6n-1)$ or $(6n+1)$. Except 2 and 3. (n is positive integer).

The following is a prime number.

There are no prime numbers that are not $6n-1$ or $6n + 1$.

2-----
3-----
5----- $6n-1$ (Twin prime)
7----- $6n+1$

11----- $6n-1$ (Twin prime)
13----- $6n+1$

17-----6n-1 (Twin prime)

19-----6n+1

23-----6n-1

29-----6n-1 (Twin prime)

31-----6n+1

37-----6n+1

41-----6n-1 (Twin prime)

43-----6n+1

47-----6n-1

53-----6n-1

59-----6n-1

61-----6n+1

67-----6n+1

71-----6n-1 (Twin prime)

73-----6n+1

79-----6n+1

83-----6n-1

89-----6n-1

97-----6n+1

101----- 6n-1 (Twin prime)

103----- 6n+1

107----- 6n-1 (Twin prime)

109----- 6n+1

113----- 6n-1

127----- 6n+1

131----- 6n-1

137-----6n-1 (Twin prime)
139-----6n+1

149-----6n-1 (Twin prime)
151-----6n+1

157-----6n+1
163-----6n+1
167-----6n-1
173-----6n-1

179-----6n-1 (Twin prime)
181-----6n+1

191-----6n-1 (Twin prime)
193-----6n+1

197-----6n-1 (Twin prime)
199-----6n+1

211-----6n+1
223-----6n+1

227-----6n-1 (Twin prime)
229-----6n+1

233-----6n-1

239-----6n-1 (Twin prime)
241-----6n+1

251-----6n-1
257-----6n-1
263-----6n-1

269-----6n-1 (Twin prime)
271-----6n+1

277-----6n+1

281-----6n-1 (Twin prime)

283-----6n+1

293-----6n+1

307-----6n+1

311-----6n-1 (Twin prime)

313-----6n+1

317-----6n-1

331-----6n+1

337-----6n+1

347-----6n-1 (Twin prime)

349-----6n+1

353-----6n-1

359-----6n-1

367-----6n+1

373-----6n-1

379-----6n+1

383-----6n-1

389-----6n-1

397-----6n+1

401-----6n-1

409-----6n+1

419-----6n-1 (Twin prime)

421-----6n+1

431-----6n-1 (Twin prime)

433-----6n+1

439-----6n+1

443-----6n-1

449-----6n-1
457-----6n+1

461-----6n-1 (Twin prime)
463-----6n+1

467-----6n-1
479-----6n-1
487-----6n+1
491-----6n-1
499-----6n+1
503-----6n-1
509-----6n-1

521-----6n-1 (Twin prime)
523-----6n+1

541-----6n+1
547-----6n+1
557-----6n-1
563-----6n-1

569-----6n-1 (Twin prime)
571-----6n+1

577-----6n+1
587-----6n-1
593-----6n-1

599-----6n-1 (Twin prime)
601-----6n+1

607-----6n+1
613-----6n+1

617-----6n-1 (Twin prime)
619-----6n+1

631-----6n+1

641-----6n-1 (Twin prime)

643-----6n+1

647-----6n-1

653-----6n-1

659-----6n-1 (Twin prime)

661-----6n+1

673-----6n+1

677-----6n-1

683-----6n+1

691-----6n+1

701-----6n-1

709-----6n+1

719-----6n-1

727-----6n+1

733-----6n+1

739-----6n+1

743-----6n-1

751-----6n+1

757-----6n+1

761-----6n-1

769-----6n+1

773-----6n-1

787-----6n+1

797-----6n-1

809-----6n-1 (Twin prime)

811-----6n+1

821-----6n-1 (Twin prime)

823-----6n+1

827-----6n-1 (Twin prime)

829-----6n+1

839----- $6n-1$

853----- $6n+1$

857----- $6n-1$ (Twin prime)

859----- $6n+1$

863----- $6n-1$

877----- $6n+1$

881----- $6n-1$ (Twin prime)

883----- $6n+1$

887----- $6n-1$

907----- $6n+1$

911----- $6n-1$

919----- $6n+1$

929----- $6n-1$

937----- $6n+1$

941----- $6n-1$

947----- $6n-1$

953----- $6n-1$

967----- $6n-1$

971----- $6n-1$

977----- $6n-1$

983----- $6n-1$

991----- $6n+1$

997----- $6n+1$

1009----- $6n-1$

1013----- $6n+1$

1019----- $6n-1$ (Twin prime)

1021----- $6n+1$

1031----- $6n-1$ (Twin prime)

1033----- $6n+1$

1039----- $6n+1$

1049-----6n-1 (Twin prime)
1051-----6n+1

1061-----6n-1 (Twin prime)
1063-----6n+1

1069-----6n+1
1087-----6n+1

1091-----6n-1 (Twin prime)
1093-----6n+1

1097-----6n-1
1103-----6n-1
1109-----6n-1
1117-----6n+1
1123-----6n+1
1129-----6n+1

1151-----6n-1 (Twin prime)
1153-----6n+1

.....
.....

(Even numbers greater than 2 are all sums of two prime numbers, below)
(n is a positive integer)

$$4=2+2$$

$$6=3+3$$

$$8=(6n-1)+3, \quad 5+3$$

$$10=(6n-1)+(6n-1), \quad 5+5, \quad n=1, 1$$

$$12=(6n-1)+(6n+1), \quad 5+7, \quad n=1, 1$$

$$14=(6n+1)+(6n+1), \quad 7+7, \quad n=1, 1$$

$$16=(6n-1)+(6n-1), \quad 5+11, \quad n=1, 2$$

$$18=(6n+1)+(6n-1), \quad 7+11, \quad n=1, 2$$

$$20 = (6n+1) + (6n+1), \quad 7+13, \quad n=1, 2$$

$$22 = (6n-1) + (6n-1), \quad 11+11, \quad n=2, 2$$

$$24 = (6n-1) + (6n+1), \quad 11+13, \quad n=2, 2$$

$$26 = (6n+1) + (6n+1), \quad 13+13, \quad n=2, 2$$

$$28 = (6n-1) + (6n-1), \quad 11+17, \quad n=2, 3$$

$$30 = (6n+1) + (6n-1), \quad 13+17, \quad n=2, 3$$

$$32 = (6n+1) + (6n+1), \quad 13+19, \quad n=2, 3$$

$$34 = (6n-1) + (6n-1), \quad 17+17, \quad n=3, 3$$

$$36 = (6n-1) + (6n+1), \quad 17+19, \quad n=3, 3$$

$$38 = (6n+1) + (6n+1), \quad 19+19, \quad n=3, 3$$

$$40 = (6n-1) + (6n-1), \quad 17+23, \quad n=3, 4$$

$$42 = (6n+1) + (6n-1), \quad 19+23, \quad n=3, 4$$

$$44 = (6n+1) + (6n+1), \quad 13+31, \quad n=2, 5, \text{ (25 is not prime-number, so that replace)}$$

$$46 = (6n-1) + (6n-1), \quad 23+23, \quad n=4, 4$$

$$48 = (6n+1) + (6n-1), \quad 19+29, \quad n=3, 5, \text{ (25 is not prime-number, so that replace)}$$

$$50 = (6n+1) + (6n+1), \quad 19+31, \quad n=3, 5, \text{ (25 is not prime-number, so that replace)}$$

$$\text{And, } 50 = 25+25 = (6*4+1) + (6*4+1) = 13+37 = 7+43 = 3+47$$

$$52 = (6n-1) + (6n-1), \quad 23+29, \quad n=4, 5$$

$$54 = (6n-1) + (6n+1), \quad 23+31, \quad n=4, 5$$

$$56 = (6n+1) + (6n+1), \quad 13+43, \quad n=2, 7, \text{ (25 is not prime-number, so that replace)}$$

$$58 = (6n-1) + (6n-1), \quad 29+29, \quad n=5, 5$$

$$60 = (6n-1) + (6n+1), \quad 29+31, \quad n=5, 5$$

$$62 = (6n+1) + (6n+1), \quad 31+31, \quad n=5, 5$$

$$64 = (6n-1) + (6n-1), \quad 23+41, \quad n=4, 7, \text{ (35 is not prime-number, so that replace)}$$

$$66 = (6n-1) + (6n+1), \quad 23+43, \quad n=4, 7, \text{ (35 is not prime-number, so that replace)}$$

$$68 = (6n+1) + (6n+1), \quad 31+37, \quad n=5, 6$$

$$70 = (6n-1) + (6n-1), \quad 29+41, \quad n=5, 7, \text{ (35 is not prime-number, so that replace)}$$

$$72 = (6n+1) + (6n-1), \quad 31+41, \quad n=5, 7, \text{ (35 is not prime-number, so that replace)}$$

$$74 = (6n+1) + (6n+1), \quad 37+37, \quad n=6, 6$$

$$76 = (6n-1) + (6n-1), \quad 29+47, \quad n=5, 8, \text{ (35 is not prime-number,}$$

$$78 = (6n+1) + (6n-1), \quad 37+41, \quad n=6, 7$$

$$80 = (6n-1) + (6n-1), \quad 29+59, \quad n=5, 10, \text{ (35 is not prime-number,}$$

replace)

$$82 = (6n-1) + (6n-1), \quad 41+41, \quad n=7, 7$$

$$84 = (6n-1) + (6n+1), \quad 41+43, \quad n=7, 7$$

$$86 = (6n+1) + (6n+1), \quad 43+43, \quad n=7, 7$$

$$88 = (6n-1) + (6n-1), \quad 41+47, \quad n=7, 8$$

$$90 = (6n+1) + (6n-1), \quad 43+47, \quad n=7, 8$$

$$92 = (6n+1) + (6n+1), \quad 31+61, \quad n=5, 10, \text{ (49 is not prime-number,}$$

replace)

$$94 = (6n-1) + (6n-1), \quad 47+47, \quad n=8, 8$$

$$96 = (6n+1) + (6n-1), \quad 43+53, \quad n=7, 9, \text{ (49 is not prime-number,}$$

$$98 = (6n+1) + (6n+1), \quad 37+61, \quad n=6, 10, \text{ (49 is not prime-number,}$$

$$100 = (6n-1) + (6n-1), \quad 41+59, \quad n=7, 10$$

$$102 = (6n-1) + (6n+1), \quad 41+61, \quad n=7, 10$$

$$104 = (6n+1) + (6n+1), \quad 43+61, \quad n=7, 10$$

$$106 = (6n-1) + (6n-1), \quad 53+53, \quad n=9, 9$$

$$108 = (6n-1) + (6n+1), \quad 47+61,$$

$$110 = (6n+1) + (6n+1), \quad 43+67,$$

replace)

$$112 = (6n-1) + (6n-1), \quad 53+59, \quad n=9, 10$$

$$114 = (6n-1) + (6n+1), \quad 53+61, \quad n=9, 10$$

$$116 = (6n+1) + (6n+1), \quad 43+73,$$

replace)

$$118 = (6n-1) + (6n-1), \quad 59+59, \quad n=10, 10$$

$$120 = (6n-1) + (6n+1), \quad 59+61, \quad n=10, 10$$

$$122 = (6n+1) + (6n+1), \quad 61+61, \quad n=10, 10$$

$124 = (6n-1) + (6n-1)$, 53+71, $n=9, 12$, (65 is not prime-number, so that replace)

$126 = (6n-1) + (6n+1)$, 53+73, $n=9, 12$, (65 is not prime-number, so that replace)

$128 = (6n+1) + (6n+1)$, 61+67, $n=10, 11$

$130 = (6n-1) + (6n-1)$, 59+71, $n=10, 12$, (65 is not prime-number, so that replace)

$132 = (6n+1) + (6n-1)$, 61+71, $n=10, 12$, (65 is not prime-number, so that replace)

$134 = (6n+1) + (6n+1)$, 67+67, $n=11, 11$

$136 = (6n-1) + (6n-1)$, 53+83, $n=9, 14$, (65 is not prime-number, so that replace)

$138 = (6n-1) + (6n+1)$, 59+79, $n=10, 13$, (65 is not prime-number, so that replace)

$140 = (6n+1) + (6n+1)$, 67+73, $n=11, 12$

$142 = (6n-1) + (6n-1)$, 71+71, $n=12, 12$

$144 = (6n-1) + (6n+1)$, 71+73, $n=12, 12$

$146 = (6n+1) + (6n+1)$, 73+73, $n=12, 12$

$148 = (6n-1) + (6n-1)$, 59+89, $n=10, 15$, (77 and 65 are not prime-number, so that replace)

$150 = (6n-1) + (6n+1)$, 71+79, $n=12, 13$

$152 = (6n+1) + (6n+1)$, 73+79, $n=12, 13$

$154 = (6n-1) + (6n-1)$, 71+83, $n=12, 14$, (77 is not prime-number, so that replace)

$156 = (6n+1) + (6n-1)$, 73+83, $n=12, 14$, (77 is not prime-number, so that replace)

$158 = (6n+1) + (6n+1)$, 79+79, $n=13, 13$

$154 = (6n-1) + (6n-1)$, 71+83, $n=12, 14$, (77 is not prime-number, so that replace)

$156 = (6n+1) + (6n-1)$, 73+83, $n=12, 14$, (77 is not prime-number, so that replace)

$158 = (6n+1) + (6n+1)$, 79+79, $n=13, 13$

$160 = (6n-1) + (6n-1)$, $71+89$, $n=12, 15$, (77 is not prime-number, so that replace)

$162 = (6n-1) + (6n+1)$, $71+91$, $n=12, 15$, (77 and 85 are not prime-number, so that replace)

$164 = (6n+1) + (6n+1)$, $73+91$, $n=12, 15$, (85 is not prime-number, so that replace)

$166 = (6n-1) + (6n-1)$, $83+83$, $n=14, 14$ $168 = (6n+1) + (6n-1)$, $79+89$, $n=13, 15$, (85 is not prime-number, so that replace)

$170 = (6n+1) + (6n+1)$, $79+91$, $n=13, 15$, (85 is not prime-number, so that replace)

$172 = (6n-1) + (6n-1)$, $71+101$, $n=12, 17$, (85 is not prime-number, so that replace)

$174 = (6n+1) + (6n-1)$, $73+101$, $n=12, 17$, (85 is not prime-number, so that replace)

$176 = (6n+1) + (6n+1)$, $73+103$, $n=12, 17$, (87 is not prime-number, so that replace)

$178 = (6n-1) + (6n-1)$, $89+89$, $n=15, 15$ $180 = (6n-1) + (6n+1)$, $83+97$, $n=14, 16$, (91 is not prime-number, so that replace)

$182 = (6n+1) + (6n+1)$, $79+103$, $n=13, 17$, (91 is not prime-number, so that replace)

$184 = (6n-1) + (6n-1)$, $83+101$, $n=14, 17$, (95 is not prime-number, so that replace)

$186 = (6n-1) + (6n+1)$, $89+97$, $n=15, 16$, (91 is not prime-number, so that replace)

$188 = (6n+1) + (6n+1)$, $61+127$, $n=10, 21$, (93 is not prime-number, so that replace)

$190 = (6n-1) + (6n-1)$, $89+101$, $n=15, 17$, (95 is not prime-number, so that replace)

$192 = (6n-1) + (6n+1)$, $83+109$, $n=14, 18$, (95 is not prime-number, so that replace)

$$194 = (6n+1) + (6n+1), \quad 97+97, \quad n=16, 16$$

$196 = (6n-1) + (6n-1), \quad 83+113, \quad n=14, 19,$ (95 is not prime-number, so that replace)

$$198 = (6n+1) + (6n-1), \quad 97+101, \quad n=16, 17$$

$$200 = (6n+1) + (6n+1), \quad 97+103, \quad n=16, 17$$

$$202 = (6n-1) + (6n-1), \quad 101+101, \quad n=17, 17$$

$$204 = (6n-1) + (6n+1), \quad 101+103, \quad n=17, 17$$

$$206 = (6n+1) + (6n+1), \quad 103+103, \quad n=17, 17$$

$$208 = (6n-1) + (6n-1), \quad 101+107, \quad n=17, 18$$

$$210 = (6n-1) + (6n+1), \quad 101+109, \quad n=17, 18$$

$$212 = (6n+1) + (6n+1), \quad 103+109, \quad n=17, 18$$

$$214 = (6n-1) + (6n-1), \quad 107+107, \quad n=18, 18$$

$$216 = (6n-1) + (6n+1), \quad 107+109, \quad n=18, 18$$

$$218 = (6n+1) + (6n+1), \quad 109+109, \quad n=18, 18$$

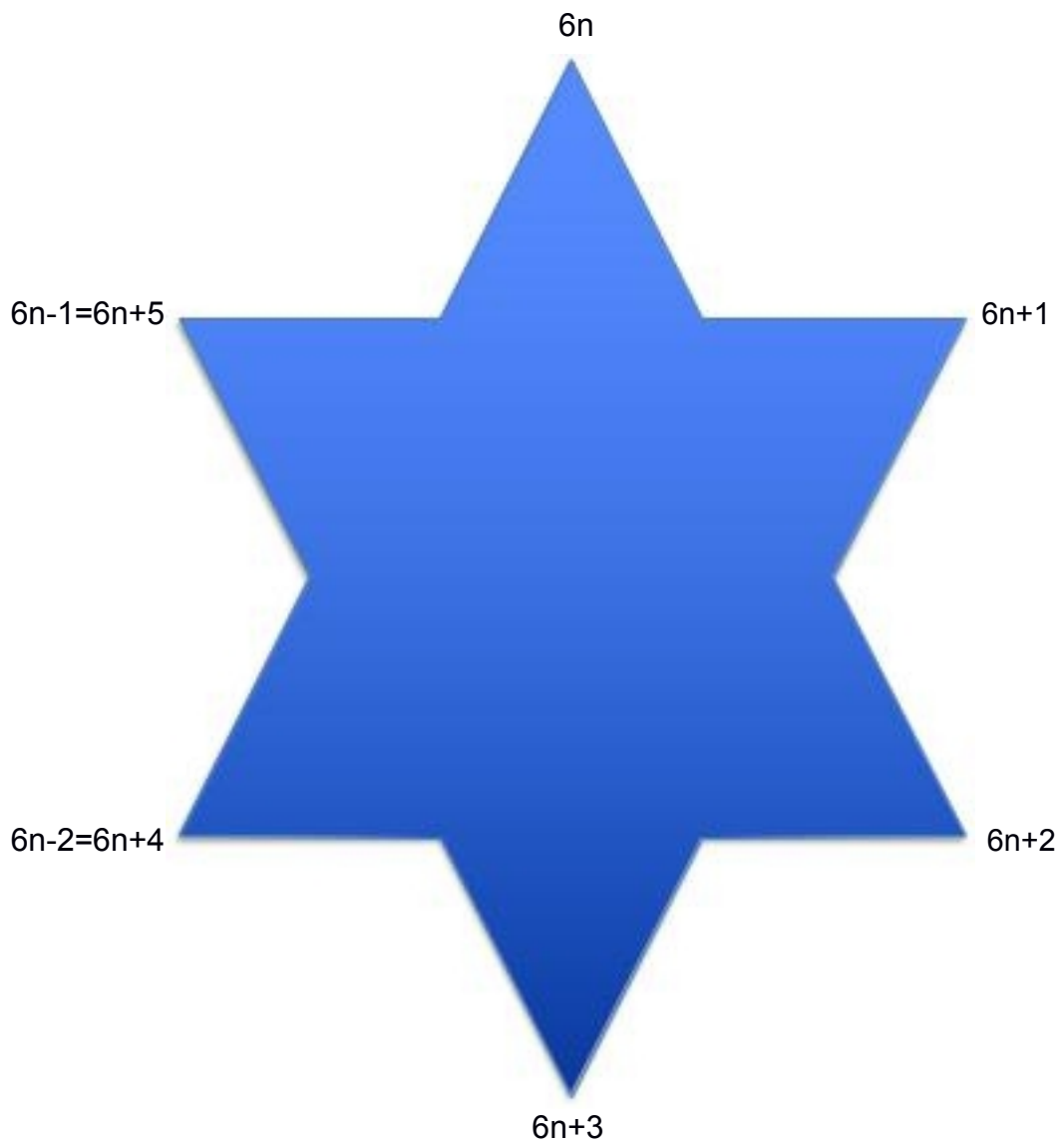
$$220 = (6n-1) + (6n-1), \quad 107+113, \quad n=18, 19$$

$$222 = (6n-1) + (6n+1), \quad 107+115, \quad n=18, 19$$

$$224 = (6n+1) + (6n+1), \quad 109+115, \quad n=18, 19$$

.... .

.... .



【Conclusion】

Thus, all numbers are executed in hexadecimal notation. For example, it does not change in a huge number (forever huge number).

$(6n + 2)$, $(6n - 2)$, $(6n)$ in the figure are even numbers. $(6n + 1)$, $(6n + 3)$, $(6n - 1)$ are odd numbers.

But, $(6n + 3)$ are not prime number, except 3.

And, at $(6n - 1)$, include multiples of 5 are not prime numbers.

For example,

5, 35, 65, 95, 125, 155, 185, 215, 245, 275, 305, 335, 365.....

And, at $(6n + 1)$, include multiples of 7 are not prime numbers.

For example,

49, 63, 77, 91, 119, 133, 147, 161, 189, 203, 217, 231, 259, 273, 287, 301, 329, 343, 357, 371, 399, 413, 427, 441, 469, 483, 497, 511, 539, 553, 567, 581, 609.....

In a hexagonal diagram, $(6n-1)$ and $(6n+1)$, many are prime numbers

And, $(6n+2)=2(3n+1)$, $(6n-3)=3(2n-1)$ and $(6n-2)=2(3n-1)$ are not prime number except 2 and 3.

And,

$(6n-1)+(6n-1)=12n-2=2(6n-1)$, is Even numbers.

$(6n-1)+(6n+1)=2(6n)$, is Even numbers.

$(6n+1)+(6n-1)=2(6n)$, is Even numbers.

$(6n+1)+(6n+1)=12n+2=2(6n+1)$, is Even numbers.

Conversely,

$12n-2=2(6n-1)=(6n-1)+(6n-1)$, is Even numbers.

$12n=2(6n)=(6n-1)+(6n+1)$, is Even numbers.

$12n=2(6n)=(6n+1)+(6n-1)$, is Even numbers.

$12n+2=2(6n+1)=(6n+1)+(6n+1)$, is Even numbers

Of a hexagon.

1st angle $(6n + 1)=1, 7, 13, 19, 25, 31, 37, 43, 49, 55, 61 \dots \dots \infty$ (odd number)

2nd angle $(6n + 2)=2, 8, 14, 20, 26, 32, 38, 44, 50, 56, 62 \dots \dots \infty$

3rd angle $(6n + 3)=(6n - 3)=3, 9, 15, 21, 27, 33, 39, 45, 51, 57, 63 \dots \dots \infty$ (odd number)

4th angle $(6n + 4)=(6n - 2)=4, 10, 16, 22, 28, 34, 40, 46, 52, 58, 64 \dots \dots \infty$

5th angle $(6n + 5) = (6n - 1) = 5, 11, 17, 23, 29, 35, 41, 47, 53, 59, 65, \dots, \infty$
(odd number)

0th angle $(6n) = 6, 12, 18, 24, 30, 36, 42, 48, 54, 60, \dots, \infty$

0th angle $(6n) = 6, 12, 18, 24, 30, 36, 42, 48, 54, 60, \dots, \infty = (6n+1) + (6n-1)$
or $(6n-1) + (6n+1)$

2nd angle $(6n + 2) = 2, 8, 14, 20, 26, 32, 38, 44, 50, 56, 62, \dots, \infty =$
 $(6n+1) + (6n+1)$

4th angle $(6n + 4) = (6n - 2) = 4, 10, 16, 22, 28, 34, 40, 46, 52, 58, 64, \dots, \infty =$
 $(6n-1) + (6n-1)$

All even numbers are included in 0th angle, 2th angle, 4th angle.

And, all prime numbers are present in 1st angle or 5th angle.

1st angle plus 5th angle are 0th angle (even number).

1st angle plus 1th angle are 2th angle (even number).

5th angle plus 5th angle are 4th angle (even number).

【References】

[1] Goldbach's conjecture: <https://en.wikipedia.org/wiki/Goldbach>.

[2] I. B. Gorshkov, Recognizability by spectrum of alternating groups, Algebra Logic, 2013, 52, no.1: 41-46.

[3] I. M. Isaacs, Character theory of finite Groups, Academic Press, New York, 1976.

[4] I. M. Isaacs, Algebra: A graduate textbook, Pacific Grove, Calif.: Brooks/Cole, 1994.

[5] H. Kurzweil, B. Stellmacher, The theory of finite groups: An introduction, Springer-Verlag, New York, 2004.



I am a psychiatrist now and also a doctor of brain surgery before.

(home)

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I would like to receive an email. I will not answer the phone.

Currently 57 years old

Born on November 26, 1961

(I am very poor of English.)