

連続素数の差+1は、約6.9割の2億番目までの差+1が素数になる。

3つ目のカウントテーブル作成のための補題資料1,2プリントアウトリスト

主な成果

1. 2億番目までの専属素数差は、最大336
2. 素数差に、1, 3, 5, 7, 11, 13,。。。を加えると1の時、その和は、素数になる。差に1を加えた差は、2億個の6.9割が、素数である。リスト3をご覧ください。

以上連続素数差+1の問題を2億番目まで、カウントした。

1週間考察作業。成果出力約2時間、準備補題2つ。

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> # Prime 1,0000,0000 PDmax change by H.E 2019-6-5:
> d := 0 : P1 := 1 : for h from 1 to 200000000 do Pn := nextprime(P1) : PD := Pn - P1 :
    if PD > d then print( PD[h] = evalf( ( PD/h, 3 ) ) ) : d := PD fi : P1 := Pn : od:
    11 = 1.
    23 = 0.667
    45 = 0.800
    610 = 0.600
    825 = 0.320
    1431 = 0.452
    18100 = 0.180
    20155 = 0.129
    22190 = 0.116
    34218 = 0.156
    361184 = 0.0304
    441832 = 0.0240
    522226 = 0.0234
    723386 = 0.0213
    8614358 = 0.00599
    9630803 = 0.00312
    11231546 = 0.00355
    11440934 = 0.00278
    118103521 = 0.00114
    132104072 = 0.00127
    148149690 = 0.000989
    154325853 = 0.000473
    1801094422 = 0.000164
    2101319946 = 0.000159
    2202850175 = 0.0000772
    2226957877 = 0.0000319
    23410539433 = 0.0000222
    24810655463 = 0.0000233
    25020684333 = 0.0000121
    28223163299 = 0.0000122
    28864955635 = 4.43 10-6
    29272507381 = 4.03 10-6
    320112228684 = 2.85 10-6

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$$336_{182837805} = 1.84 \cdot 10^{-6}$$

(1)

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> for e from 1 to 13 do c||e := 0 : ps||e := { } : od: ps||1 := {1} : c := 0 : for h from 2 to 336
  by 2 do if isprime(h + 1) then c||1 := c||1 + 1 : ps||1 := ps||1 union {h} :
  print(h[1]) fi: for e from 2 to 13 do pf := ithprime(e) : if not isprime(h + 1)
  and isprime(h + pf) then c||e := c||e + 1 : ps||e := ps||e union {h} : print(h[pf]) :
  break if: od: od: for e from 1 to 13 do if e = 1 then pp := 1 else pp := ithprime(e) fi: print
  (PF(pp) = c||e): print(ps||(e)) : od:
```

2<sub>1</sub>  
 4<sub>1</sub>  
 6<sub>1</sub>  
 8<sub>3</sub>  
 10<sub>1</sub>  
 12<sub>1</sub>  
 14<sub>3</sub>  
 16<sub>1</sub>  
 18<sub>1</sub>  
 20<sub>3</sub>  
 22<sub>1</sub>  
 24<sub>5</sub>  
 26<sub>3</sub>  
 28<sub>1</sub>  
 30<sub>1</sub>  
 32<sub>5</sub>  
 34<sub>3</sub>  
 36<sub>1</sub>  
 38<sub>3</sub>  
 40<sub>1</sub>  
 42<sub>1</sub>  
 44<sub>3</sub>  
 46<sub>1</sub>  
 48<sub>5</sub>  
 50<sub>3</sub>  
 52<sub>1</sub>  
 54<sub>5</sub>  
 56<sub>3</sub>  
 58<sub>1</sub>  
 60<sub>1</sub>  
 62<sub>5</sub>

64<sub>3</sub>  
66<sub>1</sub>  
68<sub>3</sub>  
70<sub>1</sub>  
72<sub>1</sub>  
74<sub>5</sub>  
76<sub>3</sub>  
78<sub>1</sub>  
80<sub>3</sub>  
82<sub>1</sub>  
84<sub>5</sub>  
86<sub>3</sub>  
88<sub>1</sub>  
90<sub>7</sub>  
92<sub>5</sub>  
94<sub>3</sub>  
96<sub>1</sub>  
98<sub>3</sub>  
100<sub>1</sub>  
102<sub>1</sub>  
104<sub>3</sub>  
106<sub>1</sub>  
108<sub>1</sub>  
110<sub>3</sub>  
112<sub>1</sub>  
114<sub>13</sub>  
116<sub>11</sub>  
118<sub>13</sub>  
120<sub>7</sub>  
122<sub>5</sub>  
124<sub>3</sub>  
126<sub>1</sub>  
128<sub>3</sub>  
130<sub>1</sub>  
132<sub>5</sub>  
134<sub>3</sub>

136<sub>1</sub>  
138<sub>1</sub>  
140<sub>11</sub>  
142<sub>7</sub>  
144<sub>5</sub>  
146<sub>3</sub>  
148<sub>1</sub>  
150<sub>1</sub>  
152<sub>5</sub>  
154<sub>3</sub>  
156<sub>1</sub>  
158<sub>5</sub>  
160<sub>3</sub>  
162<sub>1</sub>  
164<sub>3</sub>  
166<sub>1</sub>  
168<sub>5</sub>  
170<sub>3</sub>  
172<sub>1</sub>  
174<sub>5</sub>  
176<sub>3</sub>  
178<sub>1</sub>  
180<sub>1</sub>  
182<sub>11</sub>  
184<sub>7</sub>  
186<sub>5</sub>  
188<sub>3</sub>  
190<sub>1</sub>  
192<sub>1</sub>  
194<sub>3</sub>  
196<sub>1</sub>  
198<sub>1</sub>  
200<sub>11</sub>  
202<sub>31</sub>  
204<sub>7</sub>  
206<sub>5</sub>

---

208<sub>3</sub>

210<sub>1</sub>

212<sub>11</sub>

214<sub>13</sub>

216<sub>7</sub>

218<sub>5</sub>

220<sub>3</sub>

222<sub>1</sub>

224<sub>3</sub>

226<sub>1</sub>

228<sub>1</sub>

230<sub>3</sub>

232<sub>1</sub>

234<sub>5</sub>

236<sub>3</sub>

238<sub>1</sub>

240<sub>1</sub>

242<sub>29</sub>

244<sub>7</sub>

246<sub>5</sub>

248<sub>3</sub>

250<sub>1</sub>

252<sub>5</sub>

254<sub>3</sub>

256<sub>1</sub>

258<sub>5</sub>

260<sub>3</sub>

262<sub>1</sub>

264<sub>5</sub>

266<sub>3</sub>

268<sub>1</sub>

270<sub>1</sub>

272<sub>5</sub>

274<sub>3</sub>

276<sub>1</sub>

278<sub>3</sub>

280<sub>1</sub>

282<sub>1</sub>

284<sub>23</sub>

286<sub>7</sub>

288<sub>5</sub>

290<sub>3</sub>

292<sub>1</sub>

294<sub>13</sub>

296<sub>11</sub>

298<sub>13</sub>

300<sub>7</sub>

302<sub>5</sub>

304<sub>3</sub>

306<sub>1</sub>

308<sub>3</sub>

310<sub>1</sub>

312<sub>1</sub>

314<sub>3</sub>

316<sub>1</sub>

318<sub>13</sub>

320<sub>11</sub>

322<sub>31</sub>

324<sub>7</sub>

326<sub>5</sub>

328<sub>3</sub>

330<sub>1</sub>

332<sub>5</sub>

334<sub>3</sub>

336<sub>1</sub>

$PF(1) = 67$

{1, 2, 4, 6, 10, 12, 16, 18, 22, 28, 30, 36, 40, 42, 46, 52, 58, 60, 66, 70, 72, 78, 82, 88, 96, 100, 102, 106, 108, 112, 126, 130, 136, 138, 148, 150, 156, 162, 166, 172, 178, 180, 190, 192, 196, 198, 210, 222, 226, 228, 232, 238, 240, 250, 256, 262, 268, 270, 276, 280, 282, 292, 306, 310, 312, 316, 330, 336}

$PF(3) = 46$

{8, 14, 20, 26, 34, 38, 44, 50, 56, 64, 68, 76, 80, 86, 94, 98, 104, 110, 124, 128, 134, 146, 154, 160, 164, 170, 176, 188, 194, 208, 220, 224, 230, 236, 248, 254, 260, 266, 274, 278, 290, 304, 308, 314, 328, 334}

$$PF(5) = 28$$

{24, 32, 48, 54, 62, 74, 84, 92, 122, 132, 144, 152, 158, 168, 174, 186, 206, 218, 234, 246,  
252, 258, 264, 272, 288, 302, 326, 332}

$$PF(7) = 10$$

{90, 120, 142, 184, 204, 216, 244, 286, 300, 324}

$$PF(11) = 7$$

{116, 140, 182, 200, 212, 296, 320}

$$PF(13) = 6$$

{114, 118, 214, 294, 298, 318}

$$PF(17) = 0$$

$\emptyset$

$$PF(19) = 0$$

$\emptyset$

$$PF(23) = 1$$

{284}

$$PF(29) = 1$$

{242}

$$PF(31) = 2$$

{202, 322}

$$PF(37) = 0$$

$\emptyset$

$$PF(41) = 0$$

$\emptyset$

(2)





> # Prime Difference Distribution counter table maker PG by H.E 2019-6-6:

> DSP := [1, 2, 5, 10, 20, 50, 100, 200, 500, 1000, 2000, 5000, 10000, 20000, 50000, 100000, 200000, 500000, 1000000, 2000000, 5000000, 10000000, 20000000, 50000000, 100000000, 200000000] : PFP := [1, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 57, 61, 67, 71, 73, 79, 83, 89, 97] : for e from 1 to 25 do cta||e := 0 : od : st := time( ) : p := 1 : PI := 1 : mct := 0 : for h from 1 to 200000000 do Pnx := nextprime(PI) : pd := Pnx - PI : for e from 1 to 25 do if isprime(pd + PFP[e]) then cta||e := cta||e + 1 : PI := Pnx : if e > mct then mct := e fi : break if : od : if h = DSP[p] then T := time( ) - st : print( [H=DSP[p]], T sec) print( CTb = [seq(cta||j, j=1..mct)]) : print( ) : p := p + 1 fi : od :

[H=1], 0.

CTb = [1]

[H=2], 0.015 sec

CTb = [2]

[H=5], 0.015 sec

CTb = [5]

[H=10], 0.015 sec

CTb = [10]

[H=20], 0.015 sec

CTb = [20]

[H=50], 0.015 sec

CTb = [48, 2]

[H=100], 0.031 sec

CTb = [90, 10]

[H=200], 0.031 sec

CTb = [174, 26]

[H=500], 0.031 sec

CTb = [427, 71, 2]

[H=1000], 0.047 sec

CTb = [848, 139, 13]

[H=2000], 0.078 sec

CTb = [1654, 316, 30]

[H=5000], 0.156 sec

CTb = [4094, 812, 94]

[H=10000], 0.297 sec

$CTb = [8013, 1721, 266]$

$[H = 20000], 0.547 \text{ sec}$   
 $CTb = [15775, 3576, 649]$

$[H = 50000], 1.406 \text{ sec}$   
 $CTb = [38667, 9252, 2078, 2, 0, 1]$

$[H = 100000], 3.156 \text{ sec}$   
 $CTb = [76376, 18791, 4825, 7, 0, 1]$

$[H = 200000], 6.969 \text{ sec}$   
 $CTb = [151106, 38238, 10632, 22, 0, 2]$

$[H = 500000], 17.672 \text{ sec}$   
 $CTb = [372505, 97629, 29763, 90, 3, 10]$

$[H = 1000000], 34.781 \text{ sec}$   
 $CTb = [737281, 198345, 64015, 299, 18, 42]$

$[H = 2000000], 70.734 \text{ sec}$   
 $CTb = [1460544, 401723, 136688, 875, 46, 124]$

$[H = 5000000], 181.562 \text{ sec}$   
 $CTb = [3607693, 1020441, 367999, 3131, 196, 540]$

$[H = 10000000], 370.828 \text{ sec}$   
 $CTb = [7155263, 2062104, 772388, 8101, 584, 1558, 0, 0, 0, 0, 2]$

$[H = 20000000], 763.765 \text{ sec}$   
 $CTb = [14197006, 4163462, 1613353, 20346, 1648, 4180, 0, 0, 0, 1, 4]$

$[H = 50000000], 1975.656 \text{ sec}$   
 $CTb = [35136031, 10526577, 4248919, 67246, 6190, 15010, 0, 0, 0, 4, 23]$

$[H = 100000000], 4060.656 \text{ sec}$   
 $CTb = [69767519, 21211954, 8803059, 163048, 16083, 38255, 0, 0, 2, 8, 72]$

$[H = 200000000], 8390.703 \text{ sec}$   
 $CTb = [138579706, 42708175, 18186174, 388430, 41048, 96220, 0, 0, 3, 20, 224]$

(1)

