【Review article】

sqrt(30a-11)=t
and
sqrt(16a-7)=t

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【Abstract】

sqrt(30a-11)=t and sqrt(16a-7)=t are of course an expression derived from sqrt(30a+1)=t and sqrt(16a+1)=t, but decided to announce sqrt(30a-11)=t and sqrt(16a-7)=t, because it has a feeling of producing more prime than sqrt(30a+1)=t and sqrt(16a+1)=t.

These have the advantage that they do not produce numbers that end with 5 and It is difficult to produce a multiplication of prime numbers.

$$\sqrt{30a-11}=t$$

$$\sqrt{16a-7}=t$$

【at first】

Initially it seemed like an enumeration of prime numbers, but the number became bigger and there was only a few prime numbers, in this case it would have been better to use sqrt(30a+1)=t and sqrt(16a+1)=t as it was.

【discussion】

$$\sqrt{30a-11}=t$$

(a and t are positive integer)
Below is the one which yielded a integer.
(Never chose a prime number. I mentioned all the integers that came out.).

a=2, t=7
a=6, t=13
a=10, t=17
a=18, t=23
a=46, t=37
a=62, t=43
a=74, t=47
a=94, t=53
a=151, t=67
a=178, t=73
a=199, t=77……...xx
a=230, t=83
a=314, t=97
a=354, t=103
a=382, t=107
a=427, t=113
a=538, t=127
a=590, t=133………xx
a=626, t=137
a=682, t=143……….xx
a=822, t=157
a=887, t=163
a=930, t=167
a=998, t=173
a=1166, t=187……….xx
a=1242, t=193
a=1284, t=197
a=1374, t=203
a=1570, t=217……….xx

a=1658, t=223
a=1791, t=227
a=1811, t=233
a=2034, t=247…………..xx
a=2134, t=253…………xx
a=2202, t=257
a=2206, t=263
a=2558, t=277
a=2670, t=283
a=2746, t=287
a=2862, t=293
a=3147, t=307
a=3266, t=313
a=3350, t=317
a=3478, t=323………...xx
a=3786, t=337
a=3922, t=343…………xx
a=4014, t=347
a=4154, t=353
a=4490, t=367
a=4638, t=373
a=4738, t=377
a=4890, t=383
a=5254, t=397
a=5414, t=403…………xx
a=5522, t=407…………xx
a=5686, t=413…………..xx
a=6078, t=427………...xx
a=6250, t=433
a=6366, t=437………...xx
a=6542, t=443
a=6963, t=457
a=7146, t=463
a=7270, t=467
a=7458, t=473…………xx
a=7906, t=487
a=8102, t=493
a=8234, t=497…………xx

a=8434, t=503
a=8910, t=517…………..xx
a=9118, t=523
a=9258, t=527…………..xx
a=9470, t=533…………..xx
…….
……..

prime number representable either as (6n+1)or as (6n-1)
Let t=6n+1,
then t^2=36n^2+12n+1=12(3n^2+n)+1=12{3n^2+(n+1)-1}+1
=12{3n^2+(n+1)}+1-12=12{3n^2+(n+1)}-11

if n is (=5k)(k is positive integer), then immediately we get
t^2=12{3*(5k)^2+(n+1)}-11
=60{3*(5k^2)+(n+1)}-11=30{6*(5k^2)+2(n+1)}-11

if n is (=5k+1) then immediately we get
t^2=12{3*[5k+1]^2+n+1}-11=12{3*[25k^2+10k+1]+[5k+1]+1}-11=
=12{75k^2+35k+5}-11=60{15k^2+7k+1}-11=30{30k^2+14k+2}-11

if n is (=5k+2) then immediately we get
t^2=12{3*[25k^2+20k+1]+[5k+2]+1}-11=12{3*(25k^2+20k+1)+5k+2+1}-11=
=12{75k^2+35k+6}-11=12{75k^2+35k+6}-11 (It does not hold)

if n is (=5k+3) then immediately we get
t^2=12{3*[25k^2+30k+9]+[5k+3]+1}-11=12{75k^2+90k+27+5k+4}-11=
=12{75k^2+35k+31}-11=12{75k^2+35k+31}-11(It does not hold)

if n is (=5k+4) then immediately we get
t^2=12{3*[5k+4]^2+[5k+4]+1}-11=12{3*[25k^2+40k+16]+[5k+4]+1}-11=
=12{75k^2+125k+53}-11(It does not hold)

similarity, if t=6n-1.

$$\sqrt{16a-7}=t$$

(a and t are positive integer)
Below is the one which yielded a integer.
(Never chose a prime number. I mentioned all the integers that came out.).

a=1, t=3
a=2, t=5
a=8, t=11
a=11, t=13
a=23, t=19
a=29, t=21……...xx
a=46, t=27……...xx
a=53, t=29
a=76, t=35……...xx
a=85, t=37
a=116, t=43
a=126, t=45……...xx
a=163, t=51………xx
a=176, t=53
a=219, t=59
a=233, t=61
a=280, t=67
a=297, t=69………xx
a=353, t=75……….xx
a=371, t=77……….xx
a=432, t=83
a=452, t=85……….xx
a=518, t=91………...xx
a=540, t=93………xx
a=613, t=99……….xx
a=638, t=101
a=717, t=107
a=743, t=109
a=827, t=115……….xx
a=856, t=117……….xx
a=946, t=123

a=977, t=125………...xx
a=1073, t=131
a=1106, t=133………xx
a=1208, t=139
a=1243, t=141……….xx
a=1351, t=147……….xx
a=1388, t=149
a=1502, t=155………xx
a=1541, t=157
a=1661, t=163
a=1702, t=165………...xx
a=1828, t=171
a=1870, t=173
a=2003, t=179
a=2048, t=181
a=2186, t=187
a=2233, t=189
a=2377, t=195………...xx
a=2426, t=197
a=2577, t=203
a=2628, t=205………...xx
a=2783, t=211
a=2836, t=213
a=2998, t=219
a=3053, t=221
a=3221, t=227
a=3278, t=229
a=3452, t=235…………xx
a=3511, t=237
a=3691, t=243
a=3752, t=245…………...xx
a=3938, t=251
a=4002, t=253
a=4193, t=259
a=4258, t=261……………….xx
a=4456, t=267……………xx
a=4523, t=269
a=4727, t=275…………...xx

a=4796, t=277
a=5006, t=283
a=5077, t=285…………...xx
a=5293, t=291…………...xx
a=5366, t=293
a=5588, t =299…………xx
a=5663, t=301…………..xx
a=5891, t=307
a=5968, t=309…………...xx
a=6202, t=315……………..xx
a=6281, t=317
a=6521, t=323…………….xx
a=6602, t=325………………..xx
a=6848, t=331
a=6931, t=333………...xx
a=7183, t=339………...xx
a=7268, t=341…………..xx
a=7526, t=347
a=7613, t=349
a=7877, t=355…………..xx
a=7966, t=357…………….xx
a=8236, t=363………...xx
a=8327, t=365…………..xx
a=8603, t=371…………..xx
a=8697, t=373
a=8978, t=379
a=9073, t=381…………xx
a=9361, t=387…………..xx
a=9458, t=389
……...
……...
prime number representable either as (8n+1)or as (8n-1)
Let t=8n+1,
*then t^2=64n^2+16n+1=16(4*2n^2+n)+1=16{8n^2+(n+1)-1}+1*
=16{8n^2+(n+1)}-7

similarity, if t=8n-1.

【*add to*】

(a and t are positive integer)
Below is the one which yielded a prime number.

……
……
Sqrt(24a-23)=t

Prime number is representable either as (6n+1) or as (6n-1)

If (6n+1), t^2=36n^2+12n+1

If even (2k=n)
t^2=36(2k)^2+12(2k)+1=144k^2+24k+1
36 12 (6k^2+2k)+1= 24(3k^2+2k)+24-23
= 24(3k^2+2k+1)-23

If odd (2k+1=n)
t^2=12{6(k+1)^2+2(k+1)}+1=12{(6k^2+12k+1)+2k+2}+1
=12{36k^2+14k+4}= 24{18k^2+7k+2}+1
=24{18k^2+7k+2}+(24-23)
=24{18k^2+7k+2+1}-23

similarly, if (6n-1).

【*add to*】

$$\sqrt{24a+1} = t \qquad (1)$$

(a =positive integer, t =prime number)
Below is the one which yielded a prime number.

a=1, t=5

a=2, t=7
a=5, t=11
a=7, t=13
a=12, t=17
a=15, t=19
a=22, t=23
a=35, t=29
a=40, t=31
a=57, t=37
a=70, t=41
a=77, t=43
a=92, t=47
a=117, t=53
a=145, t=59
a=155, t=61
a=187, t=67
a=210, t=71
a=222, t=73
a=247, t=77
a=260, t=79
a=287, t=83
a=330, t=89
a=392, t=97
a=425, t=101
a=442, t=103
a=477, t=107
a=495, t=109
a=532, t=113
a=672, t=127
a=715, t=131
a=782, t=137
a=805, t=139
a=925, t=149
a=950, t=151
a=1028, t=157
a=1107, t=163
a=1162, t=167
a=1247, t=173

a=1335, t=179
a=1365, t=181
a=1520, t=191
a=1552, t=193
a=1617, t=197
a=1650, t=199
a=1855, t=211
a=2072, t=223
a=2147, t=227
a=2185, t=229
a=2262, t=233
a=2380, t=239
a=2420, t=241
a=2625, t=251
a=2752, t=257
a=2882, t=263
a=3015, t=269
a=3060, t=271
a=3197, t=277
a=3290, t=281
a=3337, t=283
a=3577, t=293
a=3927, t=307
a=4030, t=311
a=4082, t=313
a=4187, t=317
a=4565, t=331
a=4732, t=337
a=5075, t=349
a=5192, t=353
a=6112, t=383
a=6305, t=389
a=6567, t=397
a=6970, t=409
……
…….

Sqrt(24a+1)=t

Prime number is representable either as (6n+1) or as (6n-1).

If a=6n+1, t^2=36n^2+12n+1
t^2=12(3n^2+n)+1

If even (2k=n)
t^2= 12 (6k^2+2k)+1= 24(3k^2+2k)+1

If odd (2k+1=n)
t^2= 12{6(k+1)^2+2(k+1)}+1=12{(6k^2+12k+1)+2k+2}+1
=12{36k^2+14k+4}=24{18k^2+7k+2}+1

similarly, if a=6n-1.

Reference

1) https://en.wikipedia.org/wiki/Prime_number
2) https://en.m.wikipedia.org/wiki/Formula_for_primes

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postscript

sqrt(48a+1)=t
(a=positive integer, t is prime number)
When announcing sqrt (24a + 1), it is a very lost formulation whether to issue this or to get out of here.
At that time, I thought sqrt (24a - 23) and sqrt (48a-23) were very good with excel.
I was very lost how to announce which, I announced sqrt(48a+1)=t.

I did not calculate such as 6n + 1, I was seeking expressions that prime numbers were excavated at excel.
While organizing past files, I thought that this was better and decided to announce.

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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.
I am very poor of english.　　Document are all google-translation.
When it is translated into English, Japanese becomes cryptographically.

$$\zeta(s) = \sum_{n=1}^{\infty} \frac{1}{n^s} \tag{1}$$

$$\zeta(s) = \frac{2^s}{2^s - 1} \frac{3^s}{3^s - 1} \frac{5^s}{5^s - 1} \frac{7^s}{7^s - 1} \cdots\cdots \tag{2}$$

【*References*】

1) https://en.wikipedia.org/wiki/Riemann_hypothesis

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

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