

## ***[General topic]***

# ***toshichan-man hypothesis*** ver.44

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## ***[Abstract]***

If divided by 12, 18, 24, 30, 48, and the remainder is a multiple of 3.  
This is a multiple of 3.

And,

when dividing by 48, the remainders are 35.

This is multiplication of prime numbers or prime number.

As a postscript

If the sum of the digits of the natural number is 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39.....(Multiples of 3, Except 3)it is definitely not a prime number. Except 3.

## ***[Introduction]***

Exsample,

when

$$4449=247 \times 18 + \mathbf{3}=370 \times 12 + \mathbf{9}=185 \times 24 + \mathbf{9}=148 \times 30 + \mathbf{9}=92 \times 48$$

$$+ \mathbf{33}=3 \times 1483$$

when

$$303=16 \times 18 + \mathbf{15}=25 \times 12 + \mathbf{3}=12 \times 24 + \mathbf{15}=10 \times 30 + \mathbf{3}=3 \times 101$$

when

$$2433=135 \times 18 + \mathbf{3}=202 \times 12 + \mathbf{9}=101 \times 24 + \mathbf{9}=81 \times 30 + \mathbf{3}=3 \times 811$$

when

$$39=2 \times 18 + \mathbf{3}=3 \times 12 + \mathbf{3}=1 \times 24 + \mathbf{15}=1 \times 30 + \mathbf{9}=3 \times 13$$

when

$$1763=97 \times 18 + 17=146 \times 12 + 11=73 \times 24 + 11=73 \times 24 + 11=58 \times 30 +$$

$$23=36 \times 48 + \mathbf{35} =41 \times 43=2^6 \times 3^3+\mathbf{35}$$

when

$$2051=42 \times 48+\mathbf{35} =7 \times 293=2^5 \times 3^2 \times 7+\mathbf{35}$$

when

$$10451=217 \times 48 + \mathbf{35} =7 \times 1493=$$

when

$$36323=756 \times 48 + \mathbf{35} =7 \times 5189$$

when

$$9731=202 \times 48 + \mathbf{35} =37 \times 263$$

when

$$9827=204 \times 48 + \mathbf{35} =31 \times 317$$

when

$$10019=208 \times 48 + \mathbf{35} =43 \times 233$$

when

$$2 \times 3 \times 48 + 35 = 323, 323 - 6 = 317 = \text{prime}$$

when

$$14531=302 \times 48 + \mathbf{35} =11 \times 1321=2^5 \times 3 \times 151+\mathbf{35}$$

when

$$18851=392 \times 48 + \mathbf{35} =7 \times 2693=2^7 \times 3 \times 7^2+\mathbf{35}$$

when

$$19619=408 \times 48 + \mathbf{35} =23 \times 853=2^7 \times 3^2 \times 17+\mathbf{35}$$

when

$$4451=92 \times 48 + \mathbf{35} =\text{prime}=\mathbf{2^2 \times 23} \times 48 + \mathbf{35} =2^6 \times 3 \times 23+\mathbf{35}$$

when

$$4643=96 \times 48 + \mathbf{35} =\text{prime}=\mathbf{2^5 \times 3} \times 48 + \mathbf{35} =2^9 \times 3^2+\mathbf{35}$$

when

$$9539=198 \times 48 + 35 = \text{prime} = 2^5 \times 3^3 \times 11 + 35 \\ = 2 \times 3^2 \times 11 \times 48 + 35$$

when

$$14627=304 \times 48 + 35 = \text{prime} = 2^8 \times 3 \times 19 + 35 \\ = 2^4 \times 19 \times 48 + 35$$

when

$$1091 = 2 \times 11 \times 48 + 35 = \text{prime}$$

when

$$1283 = 2 \times 13 \times 48 + 35 = \text{prime}$$

when

$$1667 = 2 \times 17 \times 48 + 35 = \text{prime}$$

when

$$1859 = 2 \times 19 \times 48 + 35 = \text{not prime}, 1861 = \text{prime}$$

when

$$2243 = 2 \times 23 \times 48 + 35 = \text{prime}$$

when

$$2819 = 2 \times 29 \times 48 + 35 = \text{prime}$$

when

$$3011 = 2 \times 31 \times 48 + 35 = \text{prime}$$

when

$$3587 = 2 \times 37 \times 48 + 35 = \text{not prime}, 3583, 3593 \text{ is prime}$$

when

$$1379 = 4 \times 7 \times 48 + 35 = \text{twin prime}, \text{prime} = 1381$$

when

$$2723 = 8 \times 7 \times 48 + 35 = \text{not prime}$$

when

$$4259 = 8 \times 11 \times 48 + 35 = \text{prime}$$

when

$$5027 = 8 \times 13 \times 48 + 35 = \text{not prime}$$

when

$$2051 = 2 \times 3 \times 7 \times 48 + 35 = \text{twin prime}$$

when

$$3203 = 2 \times 3 \times 11 \times 48 + 35 = \text{prime}$$

when

$$3779 = 2 \times 3 \times 13 \times 48 + 35 = \text{prime}$$

when

$$4931 = 2 \times 3 \times 17 \times 48 + 35 = \text{prime}$$

when

$$4931=2*3*17*48+35=\text{prime}$$

when

$$5507=2*3*19*48+35=\text{prime}$$

when

$$6659=2*3*23*48+35=\text{prime}$$

when

$$8387=2*3*29*48+35=\text{prime}$$

when

$$8963=2*3*31*48+35=\text{prime}$$

when

$$10691=2*3*37*48+35=\text{prime}$$

when

$$11843=2*3*41*48+35=\text{not prime, } 11839, 11863 \text{ is prime.}$$

when

$$12419=2*3*43*48+35=\text{twin prime}(12421), 12413, 12433 \text{ is prime}$$

when

$$13571=2*3*47*48+35=\text{not prime, } 13567, 13577 \text{ is prime}$$

and,

If the sum of the digits of the natural number is 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39.....(Multiples of 3, Except 3),

In 3, adding each digit, 3(prime). 3 is a prime number.

for example 6,

In 50001, adding each digit, 6(not prime).= $3 \times 7 \times 2381$

In 30003, adding each digit, 6(not prime).= $3 \times 73 \times 137$

In 310011, adding each digit, 6(not prime).= $3 \times 13 \times 7949$

In 210000021, adding each digit, 6(not prime).= $3 \times 7 \times 17 \times$

5882353

In 1110000021, adding each digit, 6(not prime).= $3 \times 11 \times 379 \times$

887503

In 2100000111, adding each digit, 6(not prime).= $3 \times 11 \times$

63636367

In 5000000001, adding each digit, 6(not prime).= $3 \times 1666666667$

In 3000000003, adding each digit, 6(not prime).= $3 \times 7 \times 11 \times 13 \times$

19  $\times 52579$

In 3100000011, adding each digit, 6(not prime).=  $3 \times 97 \times 157 \times 67853$

In 11100021, adding each digit, 6(not prime).=  $3 \times 199 \times 18593$

In 1200000021, adding each digit, 6(not prime).=  $3 \times 11 \times 37 \times 982801$

In 2100000003, adding each digit, 6(not prime).=  $3 \times 700000001$

In 5000000001, adding each digit, 6(not prime).=  $3 \times 1666666667$

In 3000000003, adding each digit, 6(not prime).=  $3 \times 7 \times 11 \times 13 \times 19 \times 52579$

In 3100000011, adding each digit, 6(not prime).=  $3 \times 97 \times 157 \times 67853$

In 210000000021, adding each digit, 6(not prime).=  $3 \times 7 \times 101 \times 3541 \times 27961$

In 120000000021, adding each digit, 6(not prime).=  $3 \times 11 \times 3636363637$

In 2100111, adding each digit, 6(not prime).=  $3 \times 13 \times 53849$

for example 9,

In 40005, adding each digit, 9(not prime).=  $3^2 \times 5 \times 7 \times 127$

In 60003, adding each digit, 9(not prime).=  $3^2 \times 59 \times 113$

In 80001, adding each digit, 9(not prime).=  $3^3 \times 2963$

In 80000000001, adding each digit, 9(not prime).=  $3^6 \times 17^2 \times 379721$

In 60000000003, adding each digit, 9(not prime).=  $3^2 \times 19 \times 1627 \times 215659$

In 40000000041, adding each digit, 9(not prime).=  $3^2 \times 5 \times 7 \times 23 \times 29 \times 61 \times 3121$

In 71000000001, adding each digit, 9(not prime).=  $3^2 \times 7 \times 89 \times 211 \times 60013$

In 51000000003, adding each digit, 9(not prime).=  $3^3 \times 53 \times 35639413$

In 31000000005, adding each digit, 9(not prime).=  $3^2 \times 5 \times 13 \times 52991453$

for example 12,

In 70000000005, adding each digit, 12(not prime).= $3 \times 5 \times 13 \times 358974359$

In 90000000003, adding each digit, 12(not prime).= $3 \times 3000000001$

In 50000000007, adding each digit, 12(not prime).= $3 \times 17 \times 9059 \times 108223$

In 30000009, adding each digit, 12(not prime).= $3 \times 13 \times 769231$

In 70000005, adding each digit, 12(not prime).= $3 \times 5 \times 4666667$

In 90000003, adding each digit, 12(not prime).= $3 \times 3000001$

In 50000007, adding each digit, 12(not prime).= $3 \times 16666669$

In 30000009, adding each digit, 12(not prime).= $3 \times 13 \times 769231$

for example 15,

In 80000000007, adding each digit, 15(not prime).= $3 \times 2357 \times 11313817$

In 71000000007, adding each digit, 15(not prime).= $3 \times 1021 \times 23179889$

In 33000000009, adding each digit, 15(not prime).= $3 \times 41 \times 487 \times 550909$

In 80000000007, adding each digit, 15(not prime).= $3 \times 2357 \times 11313817$

In 71000000007, adding each digit, 15(not prime).= $3 \times 1021 \times 23179889$

for example 18,

In 80000000037, adding each digit, 18(not prime).= $3^2 \times 6229 \times 1427017$

In 71000000037, adding each digit, 18(not prime).= $3^3 \times 3557 \times 739283$

In 33000000039, adding each digit, 18(not prime).= $3^2 \times 4177 \times 877823$

In 80000000127, adding each digit, 18(not prime).= $3^2 \times 317 \times 28040659$

In 71000000037, adding each digit, 18(not prime).=  $3^3 \times 3557 \times 739283$

for example 21,

In 80000000067, adding each digit, 21(not prime).=  $3 \times 13 \times 47 \times 43644299$

In 71000000337, adding each digit, 21(not prime).=  $3 \times 7 \times 19 \times 177944863$

In 33000000339, adding each digit, 21(not prime).=  $3 \times 379 \times 29023747$

In 80000000427, adding each digit, 21(not prime).=  $3 \times 733 \times 36380173$

In 71000000337, adding each digit, 21(not prime).=  $3 \times 7 \times 19 \times 177944863$

for example 24,

In 80000000097, adding each digit, 24(not prime).=  $3 \times 29 \times 311 \times 1381 \times 2141$

In 71000000097, adding each digit, 24(not prime).=  $3 \times 13 \times 1093 \times 1665611$

In 33000000099, adding each digit, 24(not prime).=  $7 \times 43 \times 235880399$

In 80000000727, adding each digit, 24(not prime).=  $3 \times 93997 \times 283697$

In 73000000077, adding each digit, 24(not prime).=  $3 \times 47 \times 517730497$

for example 27,

In 80000000289, adding each digit, 27(not prime).= $3^2 \times 11 \times 19^2 \times 43 \times 52057$

In 71000000937, adding each digit, 27(not prime).= $3^2 \times 7888888993$

In 33000000939, adding each digit, 27(not prime).= $3^6 \times 5581 \times 8111$

In 80000007327, adding each digit, 27(not prime).= $3^2 \times 5801 \times 1532303$

In 71000000199, adding each digit, 27(not prime).= $3^2 \times 7 \times 23 \times 4899931$

for example 30,

In 80000000967, adding each digit, 30(not prime).= $3 \times 29 \times 71 \times 109 \times 118819$

In 71000006637, adding each digit, 30(not prime).= $3 \times 7 \times 59 \times 7229 \times 7927$

In 33000006639, adding each digit, 30(not prime).= $3 \times 101 \times 107 \times 1017859$

In 80000066127, adding each digit, 30(not prime).= $3 \times 347 \times 76849247$

In 71000004657, adding each digit, 30(not prime).= $3 \times 43 \times 199 \times 2765767$

In 330006639, adding each digit, 30(not prime).= $3 \times 43 \times 353 \times 7247$

for example 33,

In 80000003967, adding each digit, 33(not prime).= $3 \times 13 \times 2051282153$

In 71000007837, adding each digit, 33(not prime).= $3 \times 11 \times 13003 \times 165463$

In 33000008739, adding each digit, 33(not prime).= $3 \times 11000002913$

In 80000078127, adding each digit, 33(not prime).= $3 \times 58481 \times 455989$

In 71000007837, adding each digit, 33(not prime).= $3 \times 11 \times 13003 \times 165463$

for example 36,

In 80000008767, adding each digit, 36(not prime).= $3^2 \times 7 \times 89 \times 14267881$

In 71000009937, adding each digit, 36(not prime).= $3^2 \times 53 \times 79 \times 1171 \times 1609$

In 33000009939, adding each digit, 36(not prime).= $3^2 \times 13^3 \times 1668943$

In 80000098227, adding each digit, 36(not prime).= $3^3 \times 7 \times 17 \times 24898879$

In 71000009937, adding each digit, 36(not prime).= $3^2 \times 53 \times 79 \times 1171 \times 1609$

.....  
.....  
.....

## ***[Discussion]***

$10a+b$ ,  $a+b=(\text{Multiples of } 3)=3n$  ( $a,b,n=\text{Positive integer}$ )

$b=3n-a$ ,

$10a+b=10a+(3n-a)=9a+3n=3(3a+n)$

$100a+10b+c$ ,  $a+b+c=(\text{Multiples of } 3)=3n$  ( $a,b,c,n=\text{Positive integer}$ )

$a+b=3n-c$ ,  $a+c=3n-b$ ,  $b+c=3n-a$

$c=3n-b-a$

$100a+10b+c=100a+10b+(3n-b-a)=3n+99a+9b=3(n+33a+3b)$

$1000a+100b+10c+d$ ,  $a+b+c+d=(\text{Multiples of } 3)=3n$   
( $a,b,c,d,n=\text{Positive integer}$ )

$$a+b+c=3n-d, \quad a+c+d=3n-b, \quad b+c+d=3n-a$$

$$d=3n-c-b-a$$

$$1000a+100b+10c+d=1000a+100b+10c+(3n-c-b-a) \\ =3n+999a+99b+9c=3(n+333a+33b+3c)$$

It is the same as follows.

## ***[References]***

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