

## A definit pattern among prime counting position

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Would you like to see an interesting relationship? If I replace the variable of any polynomial with a prime number and obtain the remainder of the division by certain small numbers, I can obtain several series of combined results that are specific to each prime number. If I do the same with integers and consider only the series obtained by a particular prime number, for example 104729, I can verify that the counting of prime numbers with the same sequence occurs in such a way that if I count how many primes there are up to the given prime number among the integers... the quantity found will be exactly equal to how many times this series of remainders is true among the series of primes that are also equal to this specific series, and consider that the position with which these series of remainders have as a position among the series counted among the primes is completely random and yet when I count the number of times that the series of remainders appears in the group of integers, it gives exactly the position of the position of the prime number in particular.

```
nn=Range[1,10000000]
```

```
n=Select[nn,PrimeQ,(2000)]
```

```
n2=Select[nn,IntegerQ,(500)]
```

```
k=(n^2)-1+(n)+(2-4n)
```

```
d=n^4-1+n^2
```

```
c=n^3+2
```

```
e=Mod[c,3]
```

```
f=Mod[d,3]
```

```
g=Mod[k,3]
```

```
h=Mod[c,7]
```

```
i=Mod[d,7]
```

```
j=Mod[k,7]
```

```
l=Mod[c,4]
```

```
m=Mod[d,4]
```

```
o=Mod[k,4]
```

```
r=Mod[c,5]
```

```
s=Mod[d,5]
```

```
t=Mod[k,5]
```

```
QQ=Transpose[{e,f,g,h,i,j,l,m,o,r,s,t}]
```

```
n2=104729
```

```
k1=(n2^2)-1+(n2)+(2-4n2)
```

```
d1=n2^4-1+n2^2
```

```
c1=n2^3+2
```

```
e1=Mod[c1,3]
```

```
f1=Mod[d1,3]
```

```
g1=Mod[k1,3]
```

```
h1=Mod[c1,7]
```

```
i1=Mod[d1,7]
```

```
j1=Mod[k1,7]
```

```
l1=Mod[c1,4]
```

```
m1=Mod[d1,4]
```

```
o1=Mod[k1,4]
```

```
r1=Mod[c1,5]
```

```
s1=Mod[d1,5]
```

```
t1=Mod[k1,5]
```

```
QQ=Transpose[{e,f,g,h,i,j,l,m,o,r,s,t}]
```

```
a={e1,f1,g1,h1,i1,j1,l1,m1,o1,r1,s1,t1}
```

```
existeSublista = MemberQ[QQ,a]
```

```
Position[QQ,a]
```

```
n2=Select[nn,IntegerQ,{104729}]
```

```
k1=(n2^2)-1+(n2)+(2-4n2)
```

```
d1=n2^4-1+n2^2
```

```
c1=n2^3+2
```

```
e1=Mod[c1,3]
```

```
f1=Mod[d1,3]
```

```
g1=Mod[k1,3]
```

```
h1=Mod[c1,7]
```

```
i1=Mod[d1,7]
```

```
j1=Mod[k1,7]
```

```

l1=Mod[c1,4]

m1=Mod[d1,4]

o1=Mod[k1,4]

r1=Mod[c1,5]

s1=Mod[d1,5]

t1=Mod[k1,5]

QQ=Transpose[{e,f,g,h,i,j,l,m,o,r,s,t}]

qq=Transpose[{e1,f1,g1,h1,i1,j1,l1,m1,o1,r1,s1,t1}]

existeSublista = MemberQ[qq,a]

gh=Position[qq,a]

jh=Flatten[gh]

Differences[%]

Length[%]

```

```
bg=PrimeQ[gh]
```

```
Count[jh, _?PrimeQ]
```

```
{1,1,2,3,5,6,3,1,3,1,1,0}
```

```
True
```

```

{{35},{104},{223},{442},{545},{594},{691},{786},{837},{884},{1115},{1341},{1385},{1427},{1473},{
1653},{1782},{1914},{2041},{2208},{2249},{2377},{2421},{2508},{2633},{2719},{2796},{2879},{3
000},{3081},{3165},{3283},{3321},{3404},{3441},{3526},{3568},{3613},{3694},{3849},{3973},{41
28},{4364},{4451},{4494},{4604},{4793},{4833},{4868},{4908},{4949},{4983},{5026},{5148},{518
5},{5219},{5413},{5639},{5685},{5808},{5843},{5884},{6001},{6077},{6182},{6332},{6599},{6631}
,{6709},{6858},{6966},{7004},{7042},{7086},{7347},{7422},{7651},{7870},{7908},{7983},{8060},{
8099},{8350},{8385},{8493},{8638},{9051},{9089},{9128},{9279},{9313},{9350},{9419},{9452},{9
487},{9564},{9600},{9747},{9857},{9921},{9961},{10000}}

```

```

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