

```

nn=Range[1,10000000]
n=Select[nn,PrimeQ,(2500)]
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=7919
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]
fui=Position[QQ,a]
n2=Select[nn,IntegerQ,(7919)]
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]
```

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

```
AbsoluteTiming[PrimePi[16931]]
```

```
seq1 = fui
```

```
seq2 = gh
```

```
(* Ajustar seq1 e seq2 para terem o mesmo número de elementos *)
```

```
If[Length[seq1] > Length[seq2],
```

```
    seq1 = Take[seq1, Length[seq2]]
```

```
,
```

```
    seq2 = Take[seq2, Length[seq1]]
```

```
];
```

```
a = Mod[seq2, seq1];
```

```
a1 = Differences[a];
```

```
b = seq1 - a;
```

```
b1 = Differences[b];
```

```
c = ListLinePlot[Flatten[a1], PlotStyle -> Red];
```

```
d = ListLinePlot[Flatten[b1], PlotStyle -> Blue];
```

```
e = ListLinePlot[Flatten[seq1], PlotStyle -> Green];
```

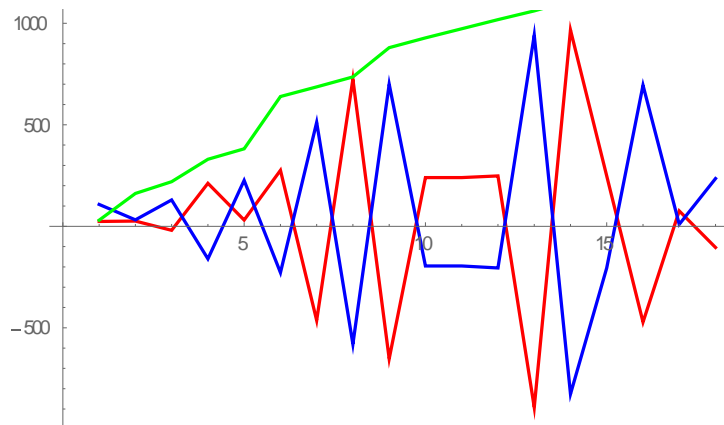
```
Show[c, d, e]
```

```
{9.4*10-6,11}
```

```
{6.*10-7,1953}
```

```
Seq1={{30},{162},{220},{330},{382},{639},{687},{736},{880},{928},{973},{1018}  
,{1061},{1111},{1252},{1295},{1518},{1604},{1735},{1778},{1871},{1912},{1993}  
,{2128},{2161},{2203},{2246},{2330}}
```

```
Seq2={{113},{533},{953},{1373},{1793},{2213},{2633},{3053},{3473},{3893},{43  
13},{4733},{5153},{5573},{5993},{6413},{6833},{7253},{7673}}
```



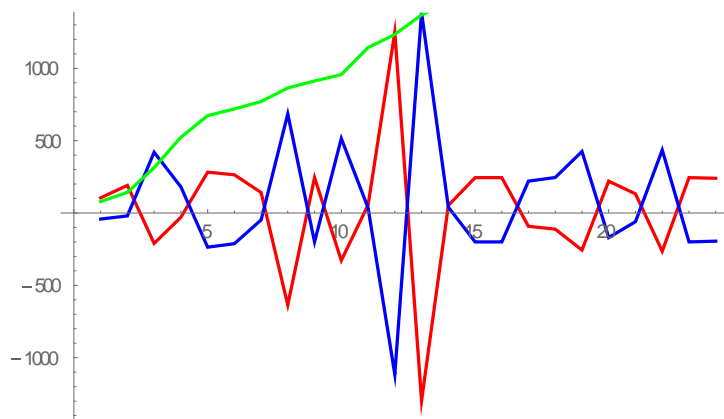
The position of the 11 th prime number of the sequence 2 is the position of the graph that has 2 opposite sides it repeats some times it is the crossing of the graphs in the prime position

{0.0000144,15}

{6.*10⁻⁷,1953}

{{79},{142},{313},{523},{673},{719},{771},{864},{912},{956},{1143},{1234},{1369},{1456},{1548},{1592},{1636},{1764},{1897},{2066},{2116},{2188},{2359},{2403},{2448}}

{{401},{821},{1241},{1661},{2081},{2501},{2921},{3341},{3761},{4181},{4601},{5021},{5441},{5861},{6281},{6701},{7121},{7541},{7961},{8381},{8801},{9221},{9641},{10061},{10481},{10901},{11321},{11741},{12161},{12581},{13001}}

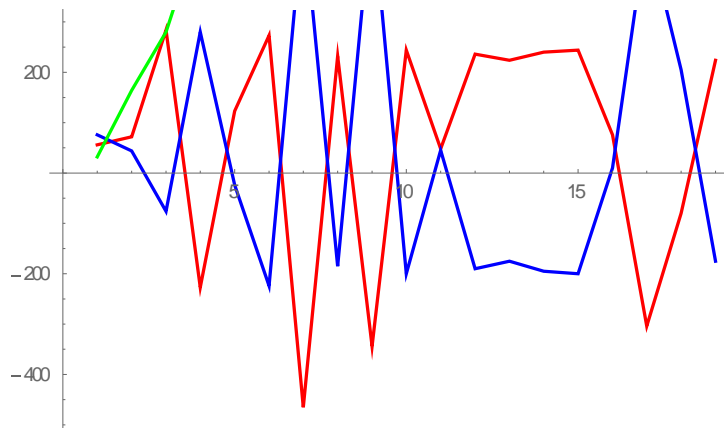


{0.0000113,11}

{1.6*10⁻⁶,1953}

{{32},{164},{280},{488},{541},{640},{689},{738},{785},{976},{1020},{1113},{1159},{1208},{1253},{1297},{1383},{1564},{1689},{1738},{1829},{1873},{1953},{1995},{2084},{2162}}

{{131},{551},{971},{1391},{1811},{2231},{2651},{3071},{3491},{3911},{4331},{4751},{5171},{5591},{6011},{6431},{6851},{7271},{7691},{8111}}



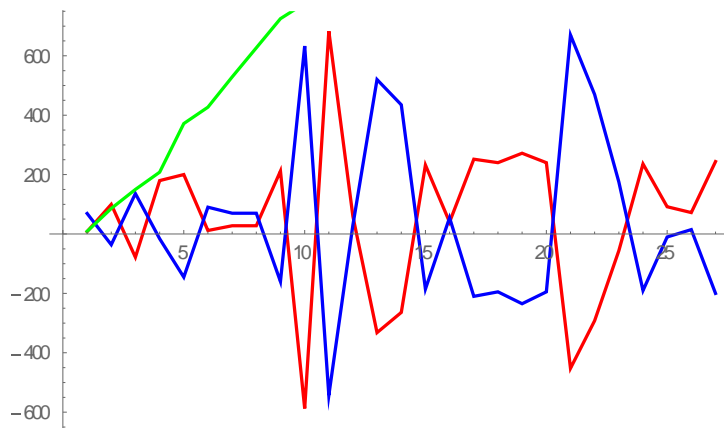
In these examples it has as a pattern the crossing 1 position before

{0.0000161,21}

{0.0009686,1723}

{{9},{86},{150},{208},{372},{427},{529},{627},{725},{777},{823},{963},{1053},{1241},{1412},{1459},
{1554},{1596},{1641},{1678},{1723},{1941},{2119},{2238},{2284},{2366},{2453},{2497}}

{{23},{443},{863},{1283},{1703},{2123},{2543},{2963},{3383},{3803},{4223},{4643},{5063},{5483},
{5903},{6323},{6743},{7163},{7583},{8003},{8423},{8843},{9263},{9683},{10103},{10523},{10943},
{11363},{11783},{12203},{12623},{13043},{13463},{13883},{14303},{14723}}

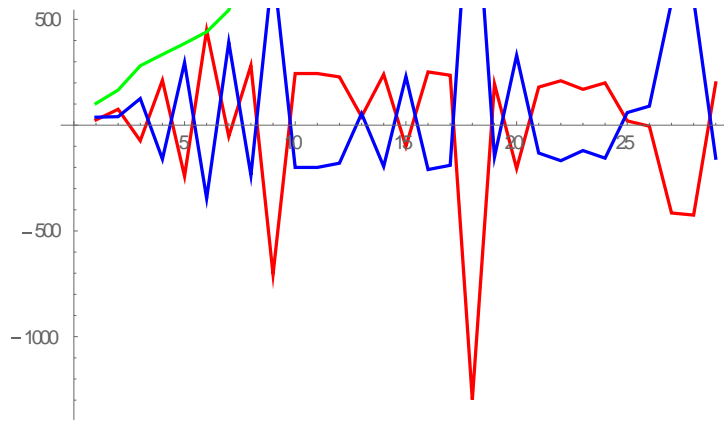


{0.0000124,18}

{1.6*10⁻⁶,1472}

{{103},{166},{281},{334},{386},{441},{544},{883},{929},{978},{1022},{1066},{1114},
{1209},{1254},{1384},{1426},{1472},{1521},{1566},{1691},{1739},{1781},{1831},
{1875},{1955},{2040},{2207},{2376},{2420}}

{{143},{563},{983},{1403},{1823},{2243},{2663},{3083},{3503},{3923},{4343},{4763},
{5183},{5603},{6023},{6443},{6863},{7283},{7703},{8123},{8543},{8963},{9383},
{9803},{10223},{10643},{11063},{11483},{11903},{12323}}

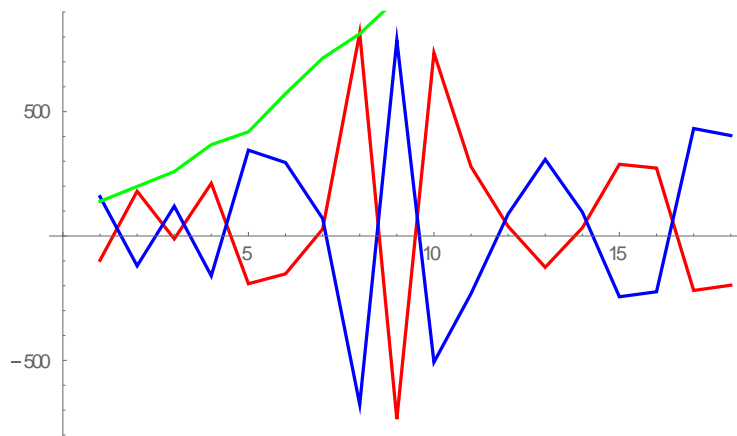


$\{9.6 \cdot 10^{-6}, 10\}$

$\{1.5 \cdot 10^{-6}, 1003\}$

$\{\{139\}, \{199\}, \{259\}, \{367\}, \{419\}, \{572\}, \{715\}, \{813\}, \{952\}, \{1003\}, \{1232\}, \{1279\}, \{1406\}, \{1588\}, \{1717\}, \{1761\}, \{1810\}, \{2023\}, \{2229\}, \{2275\}, \{2398\}\}$

$\{\{377\}, \{797\}, \{1217\}, \{1637\}, \{2057\}, \{2477\}, \{2897\}, \{3317\}, \{3737\}, \{4157\}, \{4577\}, \{4997\}, \{5417\}, \{5837\}, \{6257\}, \{6677\}, \{7097\}, \{7517\}, \{7937\}\}$

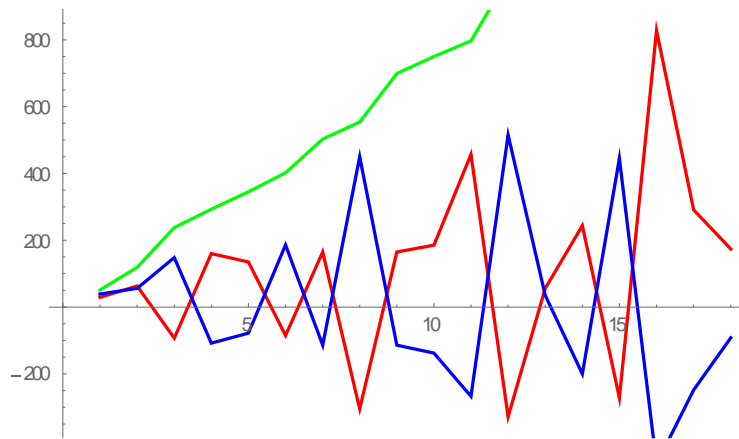


$\{9.5 \cdot 10^{-6}, 12\}$

$\{0.0003079, 987\}$

$\{\{51\}, \{119\}, \{238\}, \{293\}, \{345\}, \{402\}, \{503\}, \{554\}, \{699\}, \{750\}, \{797\}, \{987\}, \{1174\}, \{1265\}, \{1309\}, \{1482\}, \{1840\}, \{1883\}, \{1965\}, \{2136\}, \{2218\}, \{2258\}, \{2304\}, \{2474\}\}$

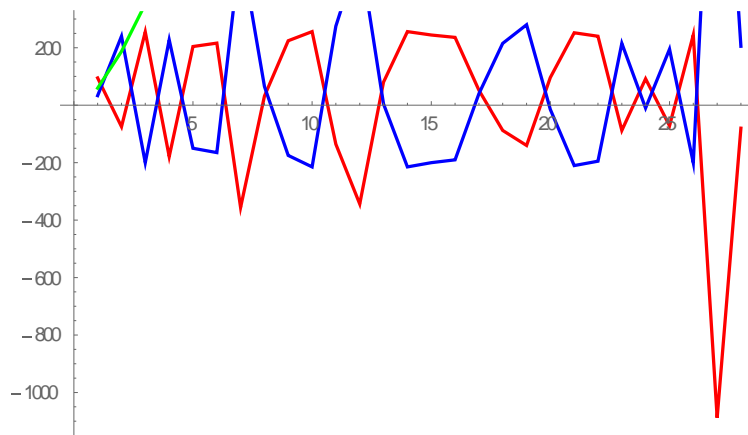
$\{\{233\}, \{653\}, \{1073\}, \{1493\}, \{1913\}, \{2333\}, \{2753\}, \{3173\}, \{3593\}, \{4013\}, \{4433\}, \{4853\}, \{5273\}, \{5693\}, \{6113\}, \{6533\}, \{6953\}, \{7373\}, \{7793\}\}$



{6.*10⁻⁷,2346}

{{59},{187},{352},{407},{455},{509},{560},{754},{851},{900},{941},{1080},{1271},{1356},{1397},{1441},{1487},{1579},{1706},{1846},{1927},{1969},{2014},{2141},{2223},{2346},{2390},{2767},{2892}}

{{277},{697},{1117},{1537},{1957},{2377},{2797},{3217},{3637},{4057},{4477},{4897},{5317},{5737},{6157},{6577},{6997},{7417},{7837},{8257},{8677},{9097},{9517},{9937},{10357},{10777},{11197},{11617},{12037},{12457},{12877},{13297},{13717},{14137},{14557},{14977},{15397},{15817},{16237},{16657},{17077},{17497},{17917},{18337},{18757},{19177},{19597},{20017},{20437},{20857}}



{0.0000717,102}

{0.0008928,10000}

{{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},{3000},{3081},{3165},{3283},{3321},{3404},{3441},{3526},{3568},{3613},{3694},{3849},{3973},{4128},{4364},{4451},{4494},{4604},{4793},{4833},{4868},{4908},{4949},{4983},{5026},{5148},{5185},{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},{9487},{9564},{9600},{9747},{9857},{9921},{9961},{10000},{10283},{10357}}

{{149},{569},{989},{1409},{1829},{2249},{2669},{3089},{3509},{3929},{4349},{4769},{5189},{5609},{6029},{6449},{6869},{7289},{7709},{8129},{8549},{8969},{9389},{9809},{10229},{10649},{11069},{11489},{11909},{12329},{12749},{13169},{13589},{14009},{14429},{14849},{15269},{15689},{16109},{16529},{16949},{17369},{17789},{18209},{18629},{19049},{19469},{19889},{20309},{20729},{21149},{21569},{21989},{22409},{22829},{23249},{23669},{24089},{24509},{24929},{25349},{25769},{26189},{26609},{27029},{27449},{27869},{28289},{28709},{29129},{29549},{29969},{30389},{30809},{31229},{31649},{32069},{32489},{32909},{33329},{33749},{34169},{34589},{35009},{35429},{35849},{36269},{36689},{37109},{37529},{37949},{38369},{38789},{39209},{39629},{40049},{40469},{40889},{41309},{41729},{42149},{42569},{42989},{43409},{43829},{44249},{44669},{45089},{45509},{45929},{46349},{46769},{47189},{47609},{48029},{48449},{48869},{49289},{49709},{50129},{50549},{50969},{51389},{51809},{52229},{52649},{53069},{53489},{53909},{54329},{54749},{55169},{55589},{56009},{56429},{56849},{57269},{57689},{58109},{58529},{58949},{59369},{59789},{60209},{60629},{61049},{61469},{61889},{62309},{62729},{63149},{63569},{63989},{64409},{64829},{65249},{65669},{66089},{66509},{66929},{67349},{67769},{68189},{68609},{69029},{69449},{69869},{70289},{70709},{71129},{71549},{71969},{72389},{72809},{73229},{73649},{74069},{74489},{74909},{75329},{75749},{76169},{76589},{77009},{77429},{77849},{78269},{78689},{79109},{79529},{79949},{80369},{80789},{81209},{81629},{82049},{82469},{82889},{83309},{83729},{84149},{84569},{84989},{85409},{85829},{86249},{86669},{87089},{87509},{87929},{88349},{88769},{89189},{89609},{90029},{90449},{90869},{91289},{91709},{92129},{92549},{92969},{93389},{93809},{94229},{94649},{95069},{95489},{95909},{96329},{96749},{97169},{97589},{98009},{98429},{98849},{99269},{99689},{100109},{100529},{100949},{101369},{101789},{102209},{102629},{103049},{103469},{103889},{104309},{104729}}

