

Scatterplots of Sequence $(4n+1)/(\text{smallest prime divisor})$ and Relationship to Prime Sequence*

$$\text{Function: } \begin{cases} a(0) = 1, \\ a(n) = 4n+1 \text{ if prime,} \\ a(n) = (4n+1) / (\text{smallest prime divisor}) \text{ if composite.} \end{cases}$$

Scatterplots for $n = 60$, $n = 100$ and $n = 200$ with rays from the origin with slopes of the following approximate values (slopes measured about $n = 1000$):

4 for primes,

1.3337 for terms whose smallest prime divisor is 3,

0.8002 for terms whose smallest prime divisor is 5,

0.5716 for terms whose smallest prime divisor is 7,

0.3637 for terms whose smallest prime divisor is 11,

0.3078 for terms whose smallest prime divisor is 13,

0.2354 for terms whose smallest prime divisor is 17,

0.2106 for terms whose smallest prime divisor is 19,

0.1740 for terms whose smallest prime divisor is 23,

0.1380 for terms whose smallest prime divisor is 29,

0.1291 for terms whose smallest prime divisor is 31,

0.1081 for terms whose smallest prime divisor is 37,

0.0976 for terms whose smallest prime divisor is 41,

0.0931 for terms whose smallest prime divisor is 43,

0.0851 for terms whose smallest prime divisor is 47,

*Enrique Navarrete, ©Scalar Consulting, 2016

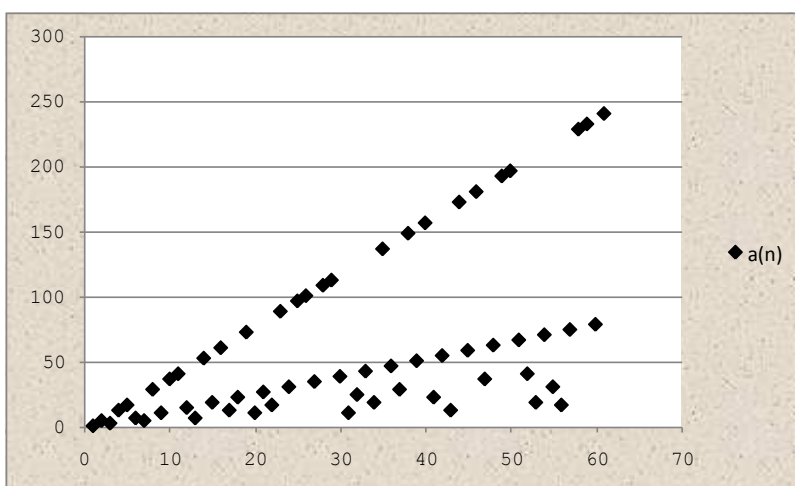
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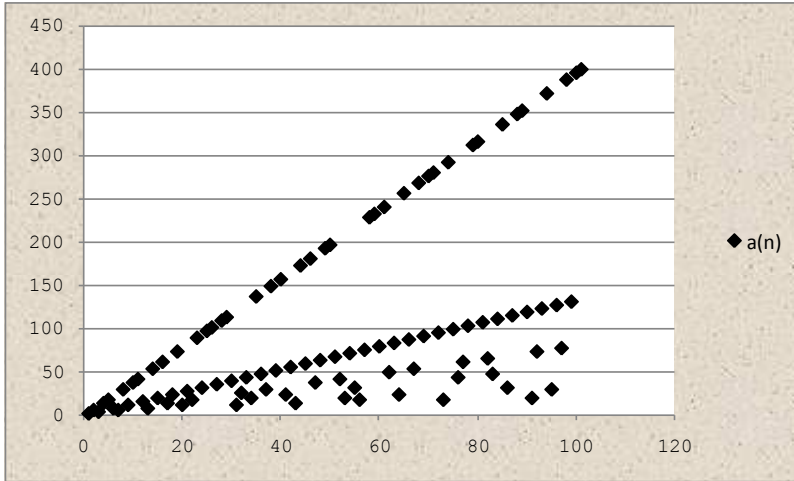
0.0755 for terms whose smallest prime divisor is 53,
 0.0678 for terms whose smallest prime divisor is 59,
 0.0656 for terms whose smallest prime divisor is 61,
 0.0597 for terms whose smallest prime divisor is 67,
 0.0564 for terms whose smallest prime divisor is 71,
 0.0548 for terms whose smallest prime divisor is 73,
 0.0506 for terms whose smallest prime divisor is 79,
 0.0482 for terms whose smallest prime divisor is 83,
 0.0450 for terms whose smallest prime divisor is 89,
 0.0412 for terms whose smallest prime divisor is 97,
 0.0396 for terms whose smallest prime divisor is 101.

Scatterplots:

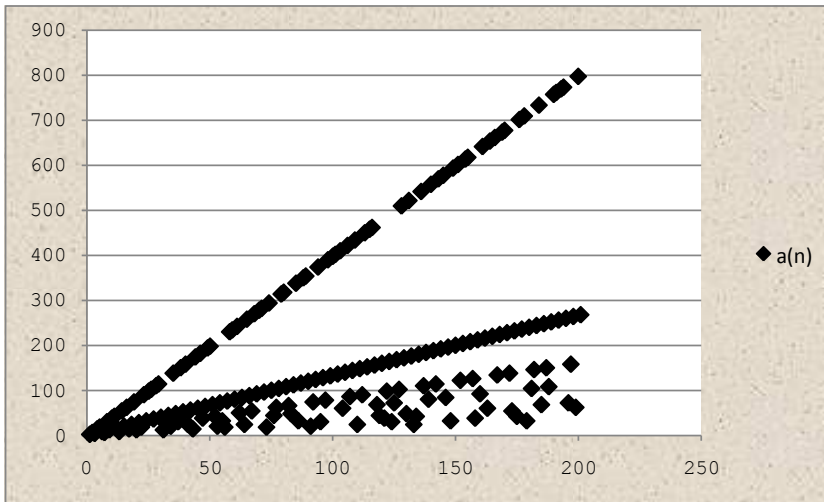
n = 60:



n = 100:



n = 200:



Note: Up to $n = 100$ have captured in $a(n)$ up to the 33th consecutive prime (=137) with exception of the first prime $p = 2$. Some other values appear in the table below.

n	position in prime sequence of the last consecutive prime captured in $a(n)$ up to n^*	prime	prime/n
100	33	137	1,37
200	57	269	1,35
1000	218	1361	1,36

*missing only $p = 2$