

Three sequences obtained concatenating $P-1$ with 1 and 11 respectively $P+1$ with 11 where P Poulet numbers

Abstract. In this paper I make the following three conjectures: (I) there exist an infinity of primes obtained concatenating the number $P - 1$ to the right with 1, where P is a Poulet number; (II) there exist an infinity of primes obtained concatenating the number $P - 1$ to the right with 11, where P is a Poulet number; (III) there exist an infinity of primes obtained concatenating the number $P + 1$ to the right with 11, where P is a Poulet number.

The *Poulet numbers sequence* (see A001567 in OEIS):

: 341, 561, 645, 1105, 1387, 1729, 1905, 2047, 2465,
2701, 2821, 3277, 4033, 4369, 4371, 4681, 5461, 6601,
7957, 8321, 8481, 8911, 10261, 10585, 11305, 12801,
13741, 13747, 13981, 14491, 15709, 15841, 16705, 18705,
18721, 19951, 23001, 23377, 25761, 29341, 30121, 30889,
31417, 31609, 31621, 33153, 34945, 35333, 39865, 41041
(...)

Conjecture 1:

There exist an infinity of primes q obtained concatenating the number $P - 1$ to the right with 1, where P is a Poulet number.

The sequence of primes q :

: 28201, 89101, 54601, 79561, 89101, 113041, 139801,
157081, 199501, 314161, 316201, 353321 (...)

A set of consecutive larger primes q :

: 9837795900601, obtained for the 100937th Poulet
number;
: 9839260242001, obtained for the 100943th Poulet
number;
: 9842341233001, obtained for the 100953th Poulet
number;
: 9843747924001, obtained for the 100959th Poulet
number;
: 9846582537601, obtained for the 100973th Poulet
number;
: 9846698538601, obtained for the 100975th Poulet
number;
: 9849620410561, obtained for the 100992th Poulet
number;

- : 9850167756001, obtained for the 100996th Poulet number;
- : 9853866288001, obtained for the 101006th Poulet number.

Conjecture 2:

There exist an infinity of primes q obtained concatenating the number $P - 1$ to the right with 11, where P is a Poulet number.

The sequence of primes q :

- : 282011, 436811, 437011, 468011, 1398011, 1670411, 1870411, 1995011, 3160811, 3162011, 3315211 (...)

A set of consecutive larger primes q :

- : 98411198086811, obtained for the 100950th Poulet number;
- : 98458094700011, obtained for the 100971th Poulet number.

Conjecture 3:

There exist an infinity of primes q obtained concatenating the number $P + 1$ to the right with 11, where P is a Poulet number.

The sequence of primes q :

- : 34211, 246611, 437011, 546211, 832211, 1374211, 1398211, 1449211, 1882211, 1995211, 3012211, 3141811, 3986611 (...)

A set of consecutive larger primes q :

- : 98362065254611, obtained for the 100933th Poulet number;
- : 98426744346211, obtained for the 100954th Poulet number;
- : 98427318504211, obtained for the 100955th Poulet number;
- : 98428953546211, obtained for the 100956th Poulet number;
- : 98470940178811, obtained for the 100978th Poulet number;
- : 98475388070611, obtained for the 100980th Poulet number;
- : 98483254330211, obtained for the 100986th Poulet number.

Note the set of three primes obtained for three consecutive Poulet numbers: 98426744346211, 98427318504211, 98428953546211.