Primes of the form n*P+R(P)-n where P primes having only odd digits and R(P) their reversals

Marius Coman
email: mariuscoman13@gmail.com

Abstract. In a previous paper I noticed that the numbers n*P + R(P) – n respectively P + n*R(P) - n, where P are Poulet numbers having only odd digits, R(P) the reversals of P and n positive integer, are often primes. In this paper I notice that the same is true for primes having only odd digits (see A030096 in OEIS for a list of such primes). Taken thirteen randomly chosen consecutive primes P having nine (odd) digits (from 971111137 to 971111993) I see that for all of them there exist at least a value of n smaller than 15 for which the number n*P + R(P) – n is prime (for 971111591, for instance, there exist four such values of n: 9, 11, 14, 15; for 971111137 three: 2, 4, 7; for 971111551 also three: 1, 2, 6; for 971111959 also three: 1, 9, 10; for 971111993 also three: 5, 6, 14).

Observation:

The numbers n*P + R(P) – n, where R (P) is the reversal of P, P is prime having only odd digits and n positive integer, are often primes.

(see the sequence A030096 in OEIS for a list of primes having only odd digits)

Primes for n smaller than or equal to 15 are obtained for thirteen randomly chosen consecutive primes P having nine (odd) digits (from 971111137 to 971111993):

: for P = 971111137:
: 2*P + R(P) – 2 = 2673333451, prime;
: 4*P + R(P) – 4 = 4615555723, prime;
: 7*P + R(P) – 7 = 7528889131, prime;

: for P = 971111153:
: 5*P + R(P) – 5 = 5206666939, prime;
: 6*P + R(P) – 6 = 6177778091, prime;

: for P = 971111159:
: 3*P + R(P) – 3 = 3864444653, prime;
: 14*P + R(P) – 14 = 14546667391, prime;

: for P = 971111171:
: 14*P + R(P) – 14 = 13766667559, prime;

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: for P = 971111539:
     :    6*P + R(P) - 6 = 6761780407, prime;
     :    14*P + R(P) - 14 = 14530671711, prime;

: for P = 971111551:
     :    1*P + R(P) - 1 = 1126222729, prime;
     :    2*P + R(P) - 2 = 2097334279, prime;
     :    6*P + R(P) - 6 = 5981780479, prime;

: for P = 971111573:
     :    2*P + R(P) - 2 = 2317334323, prime;

: for P = 971111591:
     :    9*P + R(P) - 9 = 8935115489, prime;
     :    11*P + R(P) - 11 = 10877338669, prime;
     :    14*P + R(P) - 14 = 13790673439, prime;
     :    15*P + R(P) - 15 = 14761785029, prime;

: for P = 971111599:
     :    9*P + R(P) - 9 = 9735115561, prime;

: for P = 971111711:
     :    11*P + R(P) - 11 = 10799339989, prime;

: for P = 971111753:
     :    2*P + R(P) - 2 = 2299334683, prime;
     :    6*P + R(P) - 6 = 6183781691, prime;

: for P = 971111959:
     :    1*P + R(P) - 1 = 1930223137, prime;
     :    9*P + R(P) - 9 = 9699118801, prime;
     :    10*P + R(P) - 10 = 10670230759, prime;

: for P = 971111993:
     :    5*P + R(P) - 5 = 5254671139, prime;
     :    6*P + R(P) - 6 = 6225783131, prime;
     :    14*P + R(P) - 14 = 13994679067, prime.
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