Primes obtained concatenating 9p-12 with p^2 where p prime or Poulet number

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Abstract. In this paper I make the following two conjectures: (1) There exist an infinity of primes obtained concatenating 9*p – 12 with p^2 where p is a prime (for example, such a prime is 208554289 obtained concatenating 9*233 – 12 = 2085 with 233^2 = 54289); (2) There exist an infinity of primes obtained concatenating 9*p – 12 with p^2 where p is a Poulet number (for example, such a prime is 155492989441 obtained concatenating 9*1729 – 12 = 15549 with 1729^2 = 2989441).

Conjecture 1:

There exist an infinity of primes obtained concatenating 9*p – 12 with p^2 where p is a prime.

Note that I use the sign "//" with the meaning "concatenated with".

The first ten primes from this sequence:

: 87121, obtained for p = 11 (87//121);
: 267961, obtained for p = 13 (267//961);
: 3571681, obtained for p = 41 (357//1681);
: 4112209, obtained for p = 47 (411//2209);
: 5373721, obtained for p = 61 (537//3721);
: 6455329, obtained for p = 73 (645//5329);
: 95111449, obtained for p = 107 (951//11449);
: 145526569, obtained for p = 163 (1455//26569);
: 172537249, obtained for p = 193 (1725//37249);
: 208554289, obtained for p = 233 (2085//54289).

Note that some composites obtained this way have an interesting property; such composites are:

: 105169, obtained for p = 13 (105//169); see that 105169 = 251*419 and 419 – 251 + 1 = 169;

: 195529, obtained for p = 23 (195//529); see that 195529 = 19*41*251 and 19*41 – 251 + 1 = 529;

: 8619409, obtained for p = 97 (861//9409); see that 8619409 = 29^2*37*277 and 37*277 – 29^2 + 1 = 9409.

Conjecture 2:

There exist an infinity of primes obtained concatenating 9*p – 12 with p^2 where p is a Poulet number.

The first five primes from this sequence:

: 3057116281, obtained for p = 341 (3057//116281);

: 155492989441, obtained for p = 1729 (15549//2989441);

: 253777958041, obtained for p = 2821 (25377//7958041);

: 123711188980009, obtained for p = 13747 (123711//188980009);

: 125817195468361, obtained for p = 13981 (125817//195468361).