Sequences of primes that are congruent sco n

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Abstract. In a previous article I defined the Smarandache-Coman congruence on primes. In this paper I present few sequences of primes that are congruent sco n.

Note:

I will first present again the notion of Smarandache-Coman congruence, which is very related with the notion of Smarandache-Coman divisors, which I also defined in a previous paper.

Definition:

We define in the following way the Smarandache-Coman congruence on primes: we say that two primes p and q are congruent sco n and we note $p \equiv q(\text{sco n})$ if S(p-n) = S(q-n) = k, where n is a positive non-null integer and S is the Smarandache function (obviously k is also a non-null integer). We also may say that k is equal to p sco n respectively k is also equal to q sco n and note k = p sco n = q sco n.

Note:

Because, of course, S(3-1)=2 and S(3-2)=1, there is no other prime that are congruent sco n to 3. Also there is no other prime to be congruent sco n to 5 so we start the sequences with the prime 7.

Note:

I will consider only the primes 7, 11, 13, 17 and 19 and the primes congruent sco n to them less than 1000 and, because I didn't yet study deeply all the implications of this new notion, I shall restrain myself from any comments or conjectures.

The sequence of primes congruent to 7 sco 2 (= 5):

(n = 2 is obviously the only possible n for such a congruence): 17.

The sequence of primes congruent to $11 \text{ sco } 4 \ (= 7)$: 23, 37, 107, 317.

The sequence of primes congruent to 13 sco 2 (= 11): : 79, 101, 167, 233, 277, 827.

- The sequence of primes congruent to 13 sco 6 (= 7): : 41.
- The sequence of primes congruent to 13 sco 8 (= 5): : 11, 23.
- The sequence of primes congruent to 17 sco 4 (= 13): : 43, 199, 277, 397, 421, 433, 659, 719, 823, 977.
- The sequence of primes congruent to 17 sco 6 (= 11): : 61, 83, 281, 797.
- The sequence of primes congruent to 17 sco 10 (= 7): : 31, 73.
- The sequence of primes congruent to 19 sco 2 (= 17): : 53, 181, 223, 257, 359, 461, 521, 563, 937.
- The sequence of primes congruent to 19 sco 6 (= 13): :71, 97, 137, 149, 331, 461.
- The sequence of primes congruent to 19 sco 8 (= 11): : 41, 173, 239, 283, 347, 503, 701.
- The sequence of primes congruent to 19 sco 12 (= 7): : 47.
- The sequence of primes congruent to 19 sco 14 (= 5): : 29.

References:

- 1. Coman, Marius, The Smarandache-Coman divisors of order k of a composite integer n with m prime factors, Vixra;
- 2. Coman, Marius, Seventeen sequences of Poulet numbers characterized by a certain set of Smarandache-Coman divisors, Vixra.
- 3. Coman, Marius, The Smarandache-Coman congruence on primes and four conjectures on Poulet numbers based on this new notion, Vixra.