Conjecture on the primes obtained concatenating three numbers, id est a, b and a+b+n

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Abstract. In this paper I make the following conjecture: For any n positive integer there exist an infinity of primes which can be deconcatenated in three numbers, i.e., from left to right, a, b and a + b + n. Examples: for n = 0, the least such prime is 101 (1 + 0 + 0 = 1); for n = 1, the least such prime is 113 (1 + 1 + 1 = 3); for n = 2, the least such prime is 103 (1 + 0 + 2 = 3); for n = 3, the least such prime is 137 (1 + 3 + 3 = 7); for n = 4, the least such prime is 127 (1 + 2 + 4 = 7); for n = 5, the least such prime is 139 (1 + 3 + 5 = 9); for n = 6, the least such prime is 107 (1 + 0 + 6 = 7); for n = 7, the least such prime is 3313 (3 + 3 + 7 = 13).

Conjecture:

For any n positive integer there exist an infinity of primes which can be deconcatenated in three numbers, i.e., from left to right, a, b and a + b + n.

The least five primes which can be deconcatenated in three numbers, i.e., from left to right, a, b and a + b + n, for each n from 0 to 7:

: For n = 0 we have:
  : 101 (1 + 0 + 0 = 1);
  : 167 (1 + 6 + 0 = 7);
  : 257 (2 + 5 + 0 = 7);
  : 347 (3 + 4 + 0 = 7);
  : 617 (1 + 6 + 0 = 7).

: For n = 1 we have:
  : 113 (1 + 1 + 1 = 3);
  : 157 (1 + 5 + 1 = 7);
  : 179 (1 + 7 + 1 = 9);
  : 269 (2 + 6 + 1 = 9);
  : 337 (3 + 3 + 1 = 7).

: For n = 2 we have:

: 103 (1 + 0 + 2 = 3);
: 349 (3 + 4 + 2 = 9);
: 439 (4 + 3 + 2 = 9);
: 619 (6 + 1 + 2 = 9);
: 709 (7 + 0 + 2 = 9).

: For n = 3, we have:
: 137 (1 + 3 + 3 = 7);
: 227 (2 + 2 + 3 = 7);
: 317 (3 + 1 + 3 = 7);
: 1913 (1 + 9 + 3 = 13);
: 3511 (3 + 5 + 3 = 11).

: For n = 4, we have:
: 127 (1 + 2 + 4 = 7);
: 149 (1 + 4 + 4 = 9);
: 239 (2 + 3 + 4 = 9);
: 307 (3 + 0 + 4 = 7);
: 419 (4 + 1 + 4 = 9).

: For n = 5, we have:
: 139 (1 + 3 + 5 = 9);
: 229 (2 + 2 + 5 = 9);
: 409 (4 + 0 + 5 = 9);
: 1511 (1 + 5 + 5 = 11);
: 2411 (2 + 4 + 5 = 11).

: For n = 6, we have:
: 107 (1 + 0 + 6 = 7);
: 1613 (1 + 6 + 6 = 13);
: 2311 (2 + 3 + 6 = 11);
: 2917 (2 + 9 + 6 = 17);
: 3413 (3 + 4 + 6 = 13).

: For n = 7, we have:
: 3313 (3 + 3 + 7 = 13);
: 3919 (3 + 9 + 7 = 19);
: 5113 (5 + 1 + 7 = 13);
: 6619 (6 + 6 + 7 = 19);
: 8419 (8 + 4 + 7 = 19).