Two conjectures on the number of primes obtained concatenating to the left with numbers lesser than p a prime p (II)

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Abstract. In this paper I conjecture that there exist an infinity of primes p = 30*h + j, where j can be 1, 7, 11, 13, 17, 19, 23 or 29, such that, concatenating to the left p with a number m, m < p, is obtained a number n having the property that the number of primes of the form 30*k + j up to n is equal to p. Example: such a number p is 67 = 30*2 + 7, because there are 67 primes of the form 30*k + 7 up to 3767 and 37 < 67. I also conjecture that there exist an infinity of primes q that don't belong to the set above, i.e. doesn't exist m, m < q, such that, concatenating to the left q with m, is obtained a number n having the property shown. Primes can be classified based on this criteria in two sets: primes p that have the shown property like 13, 17, 23, 31, 37, 41, 47, 59, 61, 67, 71, 73, 89, 103 (...) and primes q that don't have it like 7, 11, 19, 29, 43, 53, 79, 83, 101 (...).

Conjecture 1:

There exist an infinity of primes p = 30*h + j, where j can be 1, 7, 11, 13, 17, 19, 23 or 29, such that, concatenating to the left p with a number m, m < p, is obtained a number n having the property that the number of primes of the form 30*k + j up to n is equal to p.

Example:

Such a number p is 67 = 30*2 + 7, because there are 67 primes of the form 30*k + 7 up to 3767 and 37 < 67.

The sequence of primes p:

: p = 13, because there are 13 primes of the form 30k + 13 up to 613 and 6 < 13;

: p = 17, because there are 17 primes of the form 30k + 17 up to 817 and 8 < 17;

: p = 23, because there are 23 primes of the form 30k + 23 up to 1123 and 11 < 23;

: p = 31, because there are 31 primes of the form 30k + 1 up to 1831 and 18 < 31;

: p = 37, because there are 37 primes of the form 30k + 7 up to 1937 and 19 < 37;

: p = 41, because there are 41 primes of the form 30k + 11 up to 2141 and 21 < 41;

: p = 47, because there are 47 primes of the form 30k + 17 up to 2447 and 24 < 47;

: p = 59, because there are 59 primes of the form 30k + 29 up to 3259 and 32 < 59;

: p = 61, because there are 61 primes of the form 30k + 1 up to 3561 and 35 < 61;

: p = 67, because there are 67 primes of the form 30k + 7 up to 3767 and 37 < 67;

: p = 71, because there are 71 primes of the form 30k + 11 up to 4171 and 41 < 71;

: p = 73, because there are 73 primes of the form 30k + 13 up to 4173 and 41 < 73;

: p = 89, because there are 89 primes of the form 30k + 29 up to 5289 and 52 < 89;

: p = 103, because there are 103 primes of the form 30k + 13 up to 6103 and 6 < 103;
(...)

Note that, in few cases above:
: m = (p – 1)/2 [n = 613, 817, 1123]
: m = (p + 1)/2 [n = 1937, 2141, 2447]
: m = (p + 5)/2 [n = 1831, 3259]
: m = (p + 9)/2 [n = 3561, 4173]
: m = p – 30 [n = 3767, 4171]

Conjecture 2:

There exist an infinity of primes q that don't belong to the set above, i.e. doesn't exist m, m < q, such that, concatenating to the left q with m, is obtained a number n having the property shown.

The sequence of primes q:

7, 11, 19, 29, 43, 53, 79, 83, 101 (...)