Two conjectures on the numbers created concatenating an odd n with 3n-4 and then with 1 or 11

Abstract. In this paper I make two conjectures on the numbers m created concatenating to the right an odd number n, not divisible by 3, with 3*n – 4 and then, if n is of the form 6*k + 1, with 11, respectively, if n is of the form 6*k – 1, with 1: (I) there exist an infinity of m primes; (II) there exist an infinity of m = p*q composites such that p + q – 1 is prime (where p and q may be, or may be not, primes). Note that for 25 from the first 30 odd numbers n not divisible by 3 the number m obtained belongs to one of the two sequences considered by the conjectures above.

Conjecture I:

There exist an infinity of primes m created concatenating to the right an odd number n, not divisible by 3, with 3*n – 4 and then, if n is of the form 6*k + 1, with 11, respectively, if n is of the form 6*k – 1, with 1.

Examples:
: for n = 7 (of the form 6*k + 1), we have 3*n – 4 = 17 and m = 71711, prime;
: for n = 17 (of the form 6*k – 1), we have 3*n – 4 = 47 an m = 17471, prime.

The sequence of the primes m:

: 71711, 17471, 318911, 351011, 531551, 832451, 952811 (...)
obtained for n = 7, 17, 31, 35, 53, 83, 95.

Conjecture II:

There exist an infinity of composites m = p*q, with the property that p + q – 1 is prime (where p and q may be, or may be not, primes), created concatenating to the right an odd number n, not divisible by 3, with 3*n – 4 and then, if n is of the form 6*k + 1, with 11, respectively, if n is of the form 6*k – 1, with 1.

The sequence of the composites m:

: m = 11291 (for n = 11) = 7*1613 and 7 + 1613 – 1 = 1619, prime;
: m = 133511 (for n = 13) = 7*19073 and 7 + 19073 – 1 = 19079, prime;

: m = 23651 (for n = 23) = 67*353 and 67 + 353 – 1 = 419, prime;
: m = 257111 (for n = 25) = 41*6271 and 41 + 6271 – 1 = 6311, prime;
: m = 29831 (for n = 29) = 23*1297 and 23 + 1297 – 1 = 1319, prime;
: m = 411191 (for n = 41) = 29*14179 and 29 + 14179 – 1 = 14207, prime; also 411191 = 319*1289 and 319 + 1289 – 1 = 1607, prime;
: m = 4312511 (for n = 43) = 7*616073 and 7 + 616073 – 1 = 616079, prime;
: m = 5516111 (for n = 55) = 1231*4481 and 1231 + 4481 – 1 = 5711, prime;
: m = 6117911 (for n = 61) = 43*142277 and 43 + 142277 – 1 = 142319, prime; also 6117911 = 1949*3139 and 1949 + 3139 – 1 = 5087, prime;
: m = 65191 (for n = 65) = 7*9313 and 7 + 9313 – 1 = 9319, prime; also 6117911 = 67*973 and 67 + 973 – 1 = 1039, prime; also 6117911 = 139*469and 139 + 469 – 1 = 607, prime;
: m = 6719711 (for n = 67) = 19*353687 and 19 + 353687 – 1 = 353687, prime; also 6719711 = 53*126787 and 53 + 126787 – 1 = 126839, prime;
: m = 712091 (for n = 71) = 509*1399 and 509 + 1399 – 1 = 1907, prime;
: m = 772271 (for n = 77) = 23*33577 and 23 + 33577 – 1 = 33599, prime;
: m = 7923311 (for n = 79) = 11*720301 and 11 + 720301 – 1 = 720311, prime;
: m = 8525111 (for n = 85) = 23*370657 and 23 + 370657 – 1 = 370679, prime;
: m = 9728711 (for n = 97) = 2749*3539 and 2749 + 3539 – 1 = 6287, prime;
: m = 1012991 (for n = 101) = 7*144713 and 7 + 144713 – 1 = 144719, prime; also 1012991 = 47*21553 and 47 + 21553 – 1 = 21599, prime; also 1012991 = 329*3079 and 329 + 3079 – 1 = 21599, prime.

Note:

For 25 from the first 30 odd numbers n not divisible by 3 the number m obtained belongs to one of the two sequences considered by the conjectures above.