Conjecture on the infinity of primes obtained concatenating a prime p with p+30k

Abstract. In this paper I make the following conjecture: for any p prime, p > 5, there exist an infinity of k positive integers such that the number q obtained concatenating to the right p with p + 30*k is prime (examples: for p = 13, the least k for which q is prime is 2 because 1373 is prime; for p = 104729, the least k for which q is prime is 3 because 104729104819 is prime). It is notable the small values of k for which primes q are obtained, even in the case of primes p having 20 digits, so this formula could be a way to easily find, starting from a prime p, a prime q having twice as many digits!

Conjecture:

For any p prime, p > 5, there exist an infinity of k positive integers such that the number q obtained concatenating to the right p with p + 30*k is prime (examples: for p = 13, the least k for which q is prime is 2 because 1373 is prime; for p = 104729, the least k for which p is prime is 3 because 104729104819 is prime).

The sequence of the least k for which q is prime:
(for p ≥ 7)

: for p = 7, q = 797 is prime, so k = 3;
: for p = 11, q = 1171 is prime, so k = 2;
: for p = 13, q = 1373 is prime, so k = 2;
: for p = 17, q = 1747 is prime, so k = 1;
: for p = 23, q = 2383 is prime, so k = 3;
: for p = 29, q = 29179 is prime, so k = 5;
: for p = 31, q = 3191 is prime, so k = 2;
: for p = 37, q = 3767 is prime, so k = 1;
: for p = 41, q = 41131 is prime, so k = 3;
: for p = 43, q = 4373 is prime, so k = 1;
: for p = 47, q = 47137 is prime, so k = 3;
: for p = 53, q = 53113 is prime, so k = 2;
: for p = 59, q = 59119 is prime, so k = 2;
: for p = 61, q = 61121 is prime, so k = 2;
: for p = 67, q = 67157 is prime, so k = 3;
: for p = 71, q = 71161 is prime, so k = 3;
: for p = 73, q = 73133 is prime, so k = 2;
: for p = 79, q = 79139 is prime, so k = 2;
: for p = 83, q = 83203 is prime, so k = 4;
: for p = 89, q = 89119 is prime, so k = 1;
: for p = 97, q = 97127 is prime, so k = 1;

:   for p = 101, q = 101161 is prime, so k = 2;
:   for p = 103, q = 103133 is prime, so k = 1;
:   for p = 107, q = 107137 is prime, so k = 1;
:   for p = 109, q = 109139 is prime, so k = 1;
:   for p = 113, q = 113143 is prime, so k = 1;
:   for p = 127, q = 127157 is prime, so k = 1;

[note the chain of 5 primes q (103133, 107137, 109139, 113143, 127157) obtained for k = 1 from 5 consecutive primes p]

(...)
:   for p = 104651, q = 104651104771 is prime, so k = 4;
:   for p = 104659, q = 104659104749 is prime, so k = 3;
:   for p = 104677, q = 104677104737 is prime, so k = 2;
:   for p = 104681, q = 104681104831 is prime, so k = 5;
:   for p = 104683, q = 104683104833 is prime, so k = 5;
:   for p = 104693, q = 104693104723 is prime, so k = 1;
:   for p = 104701, q = 104701104821 is prime, so k = 4;
:   for p = 104707, q = 104707104797 is prime, so k = 3;
:   for p = 104711, q = 104711104921 is prime, so k = 7;
:   for p = 104717, q = 104717104837 is prime, so k = 4;
:   for p = 104723, q = 104723104753 is prime, so k = 1;
:   for p = 104729, q = 104729104819 is prime, so k = 3;
(...)
:   for p = 982451501, q = 982451501982451561 is prime, so k = 2;
:   for p = 982451549, q = 982451549982451609 is prime, so k = 2;
:   for p = 982451567, q = 982451567982451597 is prime, so k = 1;
(...)

The value of the least k for 5 random 20 digit primes p:

:   for p = 48112959837082048697, q = 4811295983708204869748112959837082049237, prime, so k = 18;
:   for p = 54673257461630679457, q = 5467325746163067945754673257461630680777, prime, so k = 44;
:   for p = 29497513910652490397, q = 2949751391065249039729497513910652490847, prime, so k = 15;
:   for p = 12764787846358441471, q = 1276478784635844147112764787846358441741, prime, so k = 9;
:   for p = 71755440315342536873, q = 7175544031534253687371755440315342537023, prime, so k = 5.

Note the small value of k for which first prime q is obtained, even in the case of primes p having 20 digits! This formula could be a way to easily find, starting from a prime p, a prime q having twice as many digits!