Conjectures on q]c[n]c[(q+6)and (q+6)]c[n]c[q where n is equal to 1]c[2]c[...]c[p and p, q are primes

Abstract. In this paper I make the following four conjectures: (I) let n be a number obtained concatenating the positive integers from 1 to p, where p prime of the form 6*k – 1; there exist an infinity of primes q of the form 6*h + 1 such that the number r obtained concatenating q with n then with q + 6 is prime; (II) let n be defined as in Conjecture 1; there exist an infinity of primes q of the form 6*h + 1 such that the number r obtained concatenating q + 6 with n then with q is prime; (III) let n be a number obtained concatenating the positive integers from 1 to p, where p prime of the form 6*k + 1; there exist an infinity of primes q of the form 6*h - 1 such that the number r obtained concatenating q with n then with q + 6 is prime; (IV) let n be defined as in Conjecture 3; there exist an infinity of primes q of the form 6*h - 1 such that the number r obtained concatenating q + 6 with n then with q is prime.

Conjecture I:

Let n be a number obtained concatenating the positive integers from 1 to p, where p prime of the form 6*k – 1; there exist an infinity of primes q of the form 6*h + 1 such that the number r obtained concatenating q with n then with q + 6 is prime.

The least r for n = 12345:

: 731234579, for q = 73.

The least r for n = 1234567891011:

: 1271234567891011133, for q = 127.

The least r for n = 123456789101112131415161 7:

: 211123456789101112131415161 7217, for q = 211.

Conjecture II:

Let let n be defined as in Conjecture 1; there exist an infinity of primes q of the form 6*h + 1 such that the number r obtained concatenating q + 6 with n then with q is prime.

The least r for n = 12345:

: 251234519, for q = 19.

The least r for n = 1234567891011:

: 1312345678910117, for q = 7.

The least r for n = 1234567891011121314151617:

: 251234567891011121314151617**19**, for q = 19.

Conjecture III:

Let n be a number obtained concatenating the positive integers from 1 to p, where p prime of the form 6*k + 1; there exist an infinity of primes q of the form 6*h - 1 such that the number r obtained concatenating q with n then with q + 6 is prime.

The least r for n = 1234567:

: 41123456747, for q = 41.

The least r for n = 12345678910111213:

: 231234567891011121329, for q = 23.

The least r for n = 12345678910111213141516171819:

: 71123456789101112131415161718197**7**, for q = 71.

Conjecture IV:

Let n be defined as in Conjecture 3; there exist an infinity of primes q of the form 6*h - 1 such that the number r obtained concatenating q + 6 with n then with q is prime.

The least r for n = 1234567:

: 17123456711, for q = 11.

The least r for n = 12345678910111213:

: 771234567891011121371, for q = 71.

The least r for n = 12345678910111213141516171819:

: 291234567891011121314151617181923, for q = 23.