

Four conjectures on the triplets $[p, p+4, p+10]$ and $[p, p+6, p+10]$ where p prime

Abstract. In this paper I make the following four conjectures on the triplets $[p, p + 4, p + 10]$ and $[p, p + 6, p + 10]$: (I) there exist an infinity of triplets of primes of the form $[p, p + 4, p + 10]$; (II) there exist an infinity of triplets of primes of the form $[p, p + 6, p + 10]$; (III) there exist an infinity of primes q obtained concatenating a prime p with $p + 4$ then with $p + 10$ (only p is necessary prime); (IV) there exist an infinity of primes q obtained concatenating a prime p with $p + 6$ then with $p + 10$ (only p is necessary prime).

Conjecture I:

There exist an infinity of triplets of primes of the form $[p, p + 4, p + 10]$. Obviously p has the form $6*k + 1$.

Such triplets of primes are:

: [7, 11, 17], [13, 17, 23], [19, 23, 29], [37, 41, 47], [43, 47, 53], [79, 83, 89], [97, 101, 107], [103, 107, 113], [127, 133, 137], [163, 167, 173], [223, 227, 233], [229, 233, 239], [307, 311, 317], [349, 353, 359], [379, 383, 389]...
(see A046136 in OEIS)

Conjecture II:

There exist an infinity of triplets of primes of the form $[p, p + 6, p + 10]$. Obviously p has the form $6*k + 1$.

Such triplets of primes are:

: [7, 13, 17], [13, 19, 23], [31, 37, 41], [37, 43, 47], [61, 67, 71], [73, 79, 83], [97, 103, 107], [103, 109, 113], [157, 163, 167], [223, 229, 233], [271, 277, 281], [307, 313, 317], [373, 379, 383]...
(see A046139 in OEIS)

Conjecture III:

There exist an infinity of primes q obtained concatenating a prime p with $p + 4$ then with $p + 10$ (only p is necessary prime).

The sequence of primes q:

: 111521, 172127, 293339, 596369, 677177, 717581,
103107113, 109113119, 139143149, 151155161,
157161167, 179183189, 229233239, 233237243,
251255261, 373377383 (...)

Conjecture IV:

There exist an infinity of primes q obtained concatenating a prime p with p + 6 then with p + 10 (only p is necessary prime).

The sequence of primes q:

: 71317, 111721, 192529, 313741, 374347, 596569,
838993, 107113117, 127133137, 131137141, 163169173,
211217221, 251257261, 257263267, 281287291,
307313317, 331337341, 349355359 (...)