Conjecture on an infinity of subsequences of primes in Smarandache prime partial digital sequence

Abstract. In this paper I make the following conjecture on an infinity of subsequences of primes in *Smarandache prime-partial-digital sequence*, defined as the sequence of prime numbers which admit a deconcatenation into a set of primes: for any prime p which admits a deconcatenation in k primes larger than 3 is true that there exist a number of k sequences of primes P1, P2,...,Pk, each one having an infinity of prime terms which also admit a deconcatenation in prime numbers, obtained replacing a prime q in p with primes having the same digital root as q (example: for the prime 547 there exist an infinite sequence of primes obtained replacing 5 with primes having the digital root equal to 5 (2347, 13147, 14947, ...) and also an infinite sequence of primes obtained replacing 47 with primes having the digital root equal to 2 (5101, 5227, 5281,...).

Conjecture:

For any prime p which admits a deconcatenation in k primes larger than 3 is true that there exist a number of k sequences of primes P1, P2,...,Pk, each one having an infinity of prime terms which also admit a deconcatenation in prime numbers, obtained replacing a prime q in p with primes having the same digital root as q (example: for the prime 547 there exist an infinite sequence of primes obtained replacing 5 with primes having the digital root equal to 5 (2347, 13147, 14947, ...) and also an infinite sequence of primes obtained replacing 47 with primes having the digital root equal to 2 (5101, 5227, 5281,...).

Note: the operator "\\" it will be used with the meaning "concatenated to".

The sequences P1 and P2
for the first two primes p which admit a deconcatenation in 2 primes

The sequence P1 for 137 (13\\7), obtained replacing 13 with primes having dr = 4:

: 317, 677, 2297, 2837, 4637, 5717, 7517, 7877 (...)

The sequence P2 for 137 (13\\7), obtained replacing 7 with primes having dr = 7:

: 1361, 13151, 13241, 13311, 13331, 13367, 13421 (...)

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The sequence P1 for 197 (19\\7), obtained replacing 19 with primes having dr = 1:

: 1097, 1277, 1637, 1997, 3797, 4337, 4877, 5237 (...)

The sequence P2 for 197 (19\\7), obtained replacing 7 with primes having dr = 7:

: 1979, 1997, 19421, 19457, 19709, 19727, 19853 (...)

The sequences P1, P2 and P3

for the first two primes p which admit a deconcatenation in 3 primes

The sequence P1 for 577 (= 5\\7\\7), obtained replacing 5 with primes having dr = 5:

: 2377, 4177, 13177, 23977, 31177, 38377, 40177 (...)

The sequence P2 for 577 (= 5\\7\\7), obtained replacing (the first) 7 with primes having dr = 5:

: 5437, 51517, 52237, 54217, 54577, 56197, 56737 (...)

The sequence P3 for 577 (= 5\\7\\7), obtained replacing (the second) 7 with primes having dr = 7:

: 5743, 5779, 57223, 57241, 57331, 57349, 57367 (...)

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The sequence P1 for 757 (= 7\\5\\7), obtained replacing (the first) 7 with primes having dr = 7:

: 4357, 31357, 42157, 45757, 70957, 103357, 106957 (...)

The sequence P2 for 757 (= 7\\5\\7), obtained replacing 5 with primes having dr = 5:

: 7237, 7417, 71317, 72577, 72937, 73477, 74017 (...)

The sequence P3 for 757 (= 7\\5\\7), obtained replacing (the second) 7 with primes having dr = 7:

: 7561, 75223, 75277, 75367, 75619, 75709, 75853, 75997 (...)