A formula based on the lesser prime p from a pair of twin primes that produces semiprimes q*r such that p is equal to r-q+1

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Abstract. In this paper I make an observation about an interesting formula based on the lesser prime p from a pair of twin primes, id est N = p^3 + 3*p^2 + 4*p + 1, that conducts sometimes to the result N = q*r, where q, r are primes such that r - q + 1 = p and sometimes to the result N = q*r, where at least one from q, r or both are composites such that r - q + 1 = p.

Observation:

Let p be the lesser of a pair of twin primes, p > 3; the formula N = p^3 + 3*p^2 + 4*p + 1 conducts sometimes to the result N = q*r, where q, r are primes such that r - q + 1 = p and sometimes to the result N = q*r, where at least one from q, r or both are composites such that r - q + 1 = p.

Verifying the observation:
(For nine from the first thirty such p, the formula conducts to the result mentioned above)

: for p = 5, N = 221 = 13*17
[17 - 13 + 1 = 5 = p];
: for p = 11, N = 1739 = 37*47
[47 - 37 + 1 = 11 = p];
: for p = 29, N = 27029 = 151*179
[179 - 151 + 1 = 29 = p];
: for p = 41, N = 74129 = 11*23*293
[293 - 11*23 + 1 = 41 = p];
: for p = 71, N = 373319 = 577*647
[647 - 577 + 1 = 71 = p];
: for p = 239, N = 13824239 = 11*13*277*349
[11*349 - 13*277 + 1 = 239 = p];
: for p = 419, N = 74088419 = 31*271*8819
[8819 - 31*271 + 1 = 419 = p];
: for p = 461, N = 98611589 = 31*313*10163
[10163 - 31*33 + 1 = 461 = p];
: for p = 599, N = 216000599 = 53*283*14401
[53*283 - 14401 + 1 = 599 = p].

Note that sometimes N is itself a prime:

: for p = 17, N = 5849 prime;
: for p = 149, N = 3375149 prime;
: for p = 191, N = 7078079 prime;
: for p = 197, N = 7762589 prime;
: for p = 227, N = 11852579 prime;
: for p = 347, N = 42144539 prime;
: for p = 431, N = 80621999 prime;
: for p = 521, N = 142237169 prime;
: for p = 641, N = 264609929 prime;
: for p = 659, N = 287496659 prime.