

Formula that generates a large amount of big primes and semiprimes ie $529+60 \cdot 10^k$

Abstract. In this paper I make the following observation: the formula $529 + 60 \cdot 10^k$, where k positive integer, seems to generate a large amount of big primes and semiprimes. Indeed, up to $k = 32$, this formula generates 11 primes and 11 semiprimes!

Observation:

The formula $529 + 60 \cdot 10^k$, where k positive integer, seems to generate a large amount of big primes and semiprimes. Indeed, up to $k = 35$, this formula generates 11 primes and 12 semiprimes!

The following terms are semiprimes:

: 589;
: 60529;
: 60000000529;
: 60000000000529;
: 600000000000000529;
: 6000000000000000000529;
: 600000000000000000000529;
: 6000000000000000000000000529;
: 60000000000000000000000000000529;
: 600000000000000000000000000000000529;
: 6000000000000000000000000000000000000529;
: 600529;
: 600529.

The following terms are primes:

: 1129;
: 6529;
: 600529;
: 6000529;
: 600000000529;
: 60000000000529;
: 600000000000000529;
: 6000000000000000000529;
: 6000000000000000000000000529;
: 60000000000000000000000000000529;
: 600000000000000000000000000000000529.

Note:

This special property of the square of the prime number 23 is not shared by the other squares of primes; for instance, the formula $p^2 + 60 \cdot 10^k$ generates, up to $k = 35$, only 3 primes for $p = 7$ and only 4 primes for $p = 11$.