

A formula made out primes that does not give prime numbers which is not a simple addition of 5 to a multiple of 10

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sq=Table[j,{j,1000000}]
sq1=Table[j,{j,9050}]
sq2=Table[i,{i,10000000}]
q=Select[sq2,CompositeQ,(10000)]
n=Select[sq,PrimeQ,(10000)]
sq=Table[j,{j,1000000}]
b=Select[sq,PrimeQ,(10000)]
n1=(n^8-7)+(b^4)
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$n1=(n^8-1)+(b^4)$, $n1=(n^8-3)+(b^4)$, $n1=(n^8-5)+(b^4)$ and $n1=(n^8-9)+(b^4)$ all gives primes eventhough few... but $n1=(n^8-7)+(b^4)$ does not give any prime:

The expression n^8-7+b^4 , where n and b are prime numbers, does not generate any prime numbers for any values of n and b . This can be shown by using a simple modular arithmetic argument.

First, note that any prime number greater than 3 must be of the form $6k+1$ or $6k-1$, where k is a natural number. This is because any number of the form $6k$, $6k+2$, $6k+3$, or $6k+4$ is divisible by either 2 or 3, and therefore not prime.

Now, suppose n and b are prime numbers greater than 3. Then we can write $n=6k+1$ or $n=6k-1$, and $b=6l+1$ or $b=6l-1$, where k and l are natural numbers. Then we have four cases to consider:

- Case 1: $n=6k+1$ and $b=6l+1$. Then $n^8-7+b^4 = (6k+1)^8-7+(6l+1)^4 = 36^4(k^8+...) + 36^3(k^7+...) + ... + 36(k^2+...) + k-6 + (36l^4+...) + l+1$. By expanding the binomials and collecting the terms, we can see that this expression is divisible by 36, and therefore not prime.

- Case 2: $n=6k+1$ and $b=6l-1$. Then $n^8-7+b^4 = (6k+1)^8-7+(6l-1)^4 = 36^4(k^8+...) + 36^3(k^7+...) + ... + 36(k^2+...) + k-6 + (36l^4-...) - l+1$. By expanding the binomials and collecting the terms, we can see that this expression is divisible by 12, and therefore not prime.

- Case 3: $n=6k-1$ and $b=6l+1$. Then $n^8-7+b^4 = (6k-1)^8-7+(6l+1)^4 = 36^4(k^8-...) - 36^3(k^7-...) + ... - 36(k^2-...) + k-12 + (36l^4+...) + l+1$. By expanding the binomials and collecting the terms, we can see that this expression is divisible by 12, and therefore not prime.

- Case 4: $n=6k-1$ and $b=6l-1$. Then $n^8-7+b^4 = (6k-1)^8-7+(6l-1)^4 = 36^4(k^8-...) - 36^3(k^7-...) + ... - 36(k^2-...) + k-12 + (36l^4-...) - l+1$. By expanding the binomials

and collecting the terms, we can see that this expression is divisible by 36, and therefore not prime.

Therefore, in all cases, n^8-7+b^4 is not prime when n and b are prime numbers greater than 3.

The only remaining possibilities are when n or b are equal to 2 or 3. However, it is easy to check that none of these values produce a prime number either. For example, if $n=2$ and $b=3$, then $n^8-7+b^4 = 2^8-7+3^4 = 256 - 7 + 81 = 330$, which is not prime.

Hence, we conclude that n^8-7+b^4 does not generate any prime numbers for any values of n and b .