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> # ithprime(h),x,...,z,ithprime(h+1), x+... +z=X^h by H•E 2019 – 12 – 30 :
> c := 2 :for e from 2 to 100000 do hs := 0 : for n from ithprime(e) + 1 to ithprime(e + 1)
- 1 do hs := hs + n :od: for h from 2 to 5 do if hs = 36^h then c := c + 1 :
print( [ [ithprime(e)[e thp], Xsum(hs) = [simplify(hs^(1/h))]^h, ithprime(e + 1)[(e
+ 1) thp] ] ] ) fi:od:od:
[139_34 thp, Xsum(1296) = [36]^2, 149_35 thp]
[5179_690 thp, Xsum(46656) = [36]^3, 5189_691 thp]
[186619_16886 thp, Xsum(1679616) = [36]^4, 186629_16887 thp]

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(1)

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> h := 8 : Hp := 313456656379 : Hnp := nextprime(Hp) :
if ( (Hp + Hnp) * (Hnp - Hp - 1) / 2 ) = 36^h then print( [Hp[prime8], Xsum(36^8)
= [36]^h, Hnp[nextp8] ] ) fi:
[313456656379_prime8, Xsum(2821109907456) = [36]^8, 313456656389_nextp8]

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(2)

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> for h from 2 to 10 do x := ( (36^h * 2 / 9 - 10) / 2 ) :if isprime(x) and nextprime(x) = x + 10
then print( [x[prime[h]], Xsum(36^h) = [36]^h, (x + 10)[nextp[h]] ] ) : hs := 0 :for e
from x + 1 to nextprime(x) - 1 do hs := hs + e :od:if hs = 36^h then print(True) fi:od:
[139_prime_2, Xsum(1296) = [36]^2, 149_nextp_2]
True
[5179_prime_3, Xsum(46656) = [36]^3, 5189_nextp_3]
True
[186619_prime_4, Xsum(1679616) = [36]^4, 186629_nextp_4]
True
[313456656379_prime_8, Xsum(2821109907456) = [36]^8, 313456656389_nextp_8]
True

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(3)

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> isprime(313456656379);
true

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(4)