

> # Hirotaka Ebisui NUM PG=HI-NUM nfactor  $fc1^P + \dots + fcm^P = X^P$   $X^P = HPFnum$   
 by H•E: 蛭子井博孝 2019 - 12 - 14 :

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>  $c := 0$  : print(素因数の和がP乗数になる数とFPCTab, 10000, のLIST) :for p from 2

to floor(log[2](10000)) do C ||  $p := 0$  :od: for n from 2 to 10000 do nfs := 0 : nc :=

0 : fp := 2 : ft := n :for m from 1 to n do if ft  $\neq 1$  and ft mod fp = 0 then nc := nc + 1 :

nf || nc := fp : nfs := nfs + fp : ft :=  $\frac{ft}{fp}$  else fp := nextprime(fp) if:od: for p from 2

to floor(log[2](10000)) do if nc > 1 and floor( $\left( \text{evalf} \left( \left( \frac{1}{p} \right)^P \right) \right)^P = nfs$  then c := c + 1 : C || p := C || p + 1 :if C || p mod 20 = 1 then print(n[factor[Sum[X<sup>P</sup>[cn = C || p] = nfs]]) = [seq(nf || j, j = 1 ..nc)])] fi:fi :od:if n mod 1000 = 0 then print( ) : print(N = n[made no]) : print( FcSmPJcnTab = [seq( (C || j) [P = j], j = 2 ..floor(log[2](n)) ) ] ) fi :od:

素因数の和がP乗数になる数とFPCTab, 10000, のLIST

$$4_{factor} Sum = [2, 2]$$

$$X^2 [cn = 1] = 4$$

$$15_{factor} Sum = [3, 5]$$

$$X^3 [cn = 1] = 8$$

$$39_{factor} Sum = [3, 13]$$

$$X^4 [cn = 1] = 16$$

$$87_{factor} Sum = [3, 29]$$

$$X^5 [cn = 1] = 32$$

$$183_{factor} Sum = [3, 61]$$

$$X^6 [cn = 1] = 64$$

$$200_{factor} Sum = [2, 2, 2, 5, 5]$$

$$X^2 [cn = 21] = 16$$

$$363_{factor} Sum = [3, 11, 11]$$

$$X^2 [cn = 41] = 25$$

$$799_{factor} Sum = [17, 47]$$

$$X^3 [cn = 21] = 64$$

$$834_{factor} Sum = [2, 3, 139]$$

$$X^2 [cn = 61] = 144$$

$$N = 1000_{made no}$$

$$FcSmPJcnTab = [69_{P=2}, 23_{P=3}, 15_{P=4}, 11_{P=5}, 6_{P=6}, 0, 0, 0]$$

$$1255_{factor} Sum = [5, 251]$$

$$X^8 [cn = 1] = 256$$

$$1320_{factor} Sum = [2, 2, 2, 3, 5, 11]$$

$$X^2 [cn = 81] = 25$$

$$1506_{factor} Sum = [2, 3, 251]$$

$$X^4 [cn = 21] = 256$$

$$1527_{factor} Sum = [3, 509]$$

$$X^9 [cn = 1] = 512$$

$$1695_{factor} Sum = [3, 5, 113]$$

$$X^2 [cn = 101] = 121$$

$$1904_{factor} Sum = [2, 2, 2, 2, 7, 17]$$

$$X^5 [cn = 21] = 32$$

$N = 2000$  *made no*

$$FcSmPJcnTab = [113_{P=2}, 39_{P=3}, 22_{P=4}, 21_{P=5}, 10_{P=6}, 0, 2_{P=8}, 1_{P=9}, 0]$$

$$2071_{factor} Sum = [19, 109]$$

$$X^7 [cn = 1] = 128$$

$$2106_{factor} Sum = [2, 3, 3, 3, 3, 13]$$

$$X^3 [cn = 41] = 27$$

$$2159_{factor} Sum = [17, 127]$$

$$X^2 [cn = 121] = 144$$

$$2492_{factor} Sum = [2, 2, 7, 89]$$

$$X^2 [cn = 141] = 100$$

$N = 3000$  *made no*

$$FcSmPJcnTab = [159_{P=2}, 55_{P=3}, 26_{P=4}, 30_{P=5}, 16_{P=6}, 2_{P=7}, 2_{P=8}, 1_{P=9}, 0, 0]$$

$$3043_{factor} Sum = [17, 179]$$

$$X^2 [cn = 161] = 196$$

$$3063_{factor} Sum = [3, 1021]$$

$$X^{10} [cn = 1] = 1024$$

$$3404_{factor} Sum = [2, 2, 23, 37]$$

$$X^3 [cn = 61] = 64$$

$$3549_{factor} Sum = [3, 7, 13, 13]$$

$$X^2 [cn = 181] = 36$$

$N = 4000$  *made no*

$$FcSmPJcnTab = [198_{P=2}, 67_{P=3}, 29_{P=4}, 40_{P=5}, 19_{P=6}, 4_{P=7}, 2_{P=8}, 1_{P=9}, 1_{P=10}, 0]$$

$$4043_{factor} Sum = [13, 311]$$

$$X^2 [cn = 201] = 324$$

$$4131_{factor} Sum = [3, 3, 3, 3, 3, 17]$$

$$X^5 [cn = 41] = 32$$

$$4496_{factor} Sum = [2, 2, 2, 2, 281]$$

$$X^2 [cn = 221] = 289$$

$$4653_{factor} Sum = [3, 3, 11, 47]$$

$$X^6 [cn = 21] = 64$$

$$4998_{factor} Sum = [2, 3, 7, 7, 17]$$

$$X^2 [cn = 241] = 36$$

$$N = 5000_{made\ no}$$

$$FcSmPJcnTab = [241_{P=2}, 75_{P=3}, 35_{P=4}, 44_{P=5}, 21_{P=6}, 8_{P=7}, 3_{P=8}, 1_{P=9}, 1_{P=10}, 0, 0]$$

$$5474_{factor} Sum = [2, 7, 17, 23]$$

$$X^2 [cn = 261] = 49$$

$$5650_{factor} Sum = [2, 5, 5, 113]$$

$$X^3 [cn = 81] = 125$$

$$N = 6000_{made\ no}$$

$$FcSmPJcnTab = [274_{P=2}, 83_{P=3}, 40_{P=4}, 49_{P=5}, 22_{P=6}, 9_{P=7}, 4_{P=8}, 1_{P=9}, 2_{P=10}, 0, 0]$$

$$6018_{factor} Sum = [2, 3, 17, 59]$$

$$X^4 [cn = 41] = 81$$

$$6084_{factor} Sum = [2, 2, 3, 3, 13, 13]$$

$$X^2 [cn = 281] = 36$$

$$6700_{factor} Sum = [2, 2, 5, 5, 67]$$

$$X^2 [cn = 301] = 81$$

$$N = 7000_{made\ no}$$

$$FcSmPJcnTab = [313_{P=2}, 95_{P=3}, 47_{P=4}, 54_{P=5}, 25_{P=6}, 10_{P=7}, 6_{P=8}, 2_{P=9}, 3_{P=10}, 0, 0]$$

$$7296_{factor} Sum = [2, 2, 2, 2, 2, 2, 3, 19]$$

$$X^2 [cn = 321] = 36$$

$$7500_{factor} Sum = [2, 2, 3, 5, 5, 5, 5]$$

$$X^3 [cn = 101] = 27$$

$$7848_{factor} Sum = [2, 2, 2, 3, 3, 109]$$

$$X^2 [cn = 341] = 121$$

$$N = 8000_{made\ no}$$

$$FcSmPJcnTab = [347_{P=2}, 104_{P=3}, 51_{P=4}, 59_{P=5}, 26_{P=6}, 15_{P=7}, 6_{P=8}, 3_{P=9}, 3_{P=10}, 0, 0]$$

$$8388_{factor} Sum = [2, 2, 3, 3, 233]$$

$$X^5 [cn = 61] = 243$$

$$8503_{factor} Sum = [11, 773]$$

$$X^2 [cn = 361] = 784$$

$$N = 9000_{made\ no}$$

$$FcSmPJcnTab = [375_{P=2}, 118_{P=3}, 54_{P=4}, 63_{P=5}, 29_{P=6}, 15_{P=7}, 6_{P=8}, 3_{P=9}, 3_{P=10}, 0, 0, 0]$$

$$9152_{factor} Sum = [2, 2, 2, 2, 2, 2, 11, 13]$$

$$X^2 [cn = 381] = 36$$

$$9263_{factor} Sum = [59, 157]$$

$$X^3 [cn = 121] = 216$$

$$9583_{factor} Sum = [7, 37, 37]$$

$$X^4 [cn = 61] = 81$$

$$9695_{factor} Sum = [5, 7, 277]$$

$$X^2 [cn = 401] = 289$$

$$N = 10000_{made\ no}$$

$$FcSmPJcnTab = [409_{P=2}, 126_{P=3}, 64_{P=4}, 68_{P=5}, 31_{P=6}, 16_{P=7}, 6_{P=8}, 3_{P=9}, 3_{P=10}, 0, 0, 0] \quad (1)$$

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