

```

> #  $Pa^2 + Pb^2 + Pc^2 = 3^N$  by  $H \cdot E$ 
>  $cn := 0$  : for  $n$  from 5 to 20 by 2 do  $cn := 0$  :for  $a$  from 2 to 100 do  $Pa := ithprime(a)$  :
  for  $b$  from  $a + 1$  to 300 do  $Pb := ithprime(b)$  :for  $c$  from  $b + 1$  to 500 do  $Pc :=$ 
   $ithprime(c)$  :if  $3^n = Pa^2 + Pb^2 + Pc^2$  then  $cn := cn + 1$  :  $Ps \parallel cn := [Pa, Pb, Pc]$  :fi:od:
  od:od:if  $cn \geq 1$  then  $print(N(3^n) [\{3\}^n] = [(Ps \parallel 1)[1]]^2 + [(Ps \parallel 1)[2]]^2 + [(Ps$ 
   $\parallel 1)[3]]^2)$  fi:od:

```

$$N(243)_{\{3\}^5} = [5]^2 + [7]^2 + [13]^2$$

$$N(2187)_{\{3\}^7} = [7]^2 + [17]^2 + [43]^2$$

$$N(19683)_{\{3\}^9} = [5]^2 + [83]^2 + [113]^2$$

$$N(177147)_{\{3\}^{11}} = [23]^2 + [173]^2 + [383]^2$$

$$N(1594323)_{\{3\}^{13}} = [109]^2 + [859]^2 + [919]^2$$

(1)