

> # $X^5 = y^2 + z^2$, $x^5 = y^3 + z^3$, $x^5 = y^4 + z^4$ by H·E 2019 – 11 – 15 :

> $c := 0$: for e from 2 to 4 do $c := 0$: for x from 2 to 20 do for y from 1 to 100 do for z from y to 100 do if $x^5 = y^e + z^e$ then $c := c + 1$: print($[x[.]^5 = y[.]^e + z[.]^e][H \cdot E[No = c]]$) fi:od:od:od:od:

$$[2^5 = 4^2 + 4^2]_{H \cdot E_{No=1}}$$

$$[5^5 = 10^2 + 55^2]_{H \cdot E_{No=2}}$$

$$[5^5 = 25^2 + 50^2]_{H \cdot E_{No=3}}$$

$$[5^5 = 38^2 + 41^2]_{H \cdot E_{No=4}}$$

$$[3^5 = 3^3 + 6^3]_{H \cdot E_{No=1}}$$

$$[4^5 = 8^3 + 8^3]_{H \cdot E_{No=2}}$$

$$[2^5 = 2^4 + 2^4]_{H \cdot E_{No=1}}$$

$$[17^5 = 17^4 + 34^4]_{H \cdot E_{No=2}}$$

(1)

> for e from 2 to 5 do $c := 0$: for x from 2 to 20 do for y from 1 to 100 do for z from y to 100 do for w from z to 100 do if $x^5 = y^e + z^e + w^e$ then $c := c + 1$: print($[x[.]^5 = y[.]^e + z[.]^e + w[.]^e][H \cdot E[No = c]]$) fi:od:od:od:od:od:

$$[3^5 = 1^2 + 11^2 + 11^2]_{H \cdot E_{No=1}}$$

$$[3^5 = 3^2 + 3^2 + 15^2]_{H \cdot E_{No=2}}$$

$$[3^5 = 5^2 + 7^2 + 13^2]_{H \cdot E_{No=3}}$$

$$[3^5 = 9^2 + 9^2 + 9^2]_{H \cdot E_{No=4}}$$

$$[5^5 = 2^2 + 39^2 + 40^2]_{H \cdot E_{No=5}}$$

$$[5^5 = 4^2 + 30^2 + 47^2]_{H \cdot E_{No=6}}$$

$$[5^5 = 6^2 + 8^2 + 55^2]_{H \cdot E_{No=7}}$$

$$[5^5 = 7^2 + 24^2 + 50^2]_{H \cdot E_{No=8}}$$

$$[5^5 = 9^2 + 38^2 + 40^2]_{H \cdot E_{No=9}}$$

$$[5^5 = 10^2 + 33^2 + 44^2]_{H \cdot E_{No=10}}$$

$$[5^5 = 14^2 + 15^2 + 52^2]_{H \cdot E_{No=11}}$$

$$[5^5 = 14^2 + 25^2 + 48^2]_{H \cdot E_{No=12}}$$

$$[5^5 = 15^2 + 20^2 + 50^2]_{H \cdot E_{No=13}}$$

$$[5^5 = 15^2 + 28^2 + 46^2]_{H \cdot E_{No=14}}$$

$$[5^5 = 17^2 + 30^2 + 44^2]_{H \cdot E_{No=15}}$$

$$[5^5 = 18^2 + 20^2 + 49^2]_{H \cdot E_{No=16}}$$

$$[5^5 = 20^2 + 31^2 + 42^2]_{H \cdot E_{No=17}}$$

$$[5^5 = 25^2 + 30^2 + 40^2]_{H \cdot E_{No=18}}$$

$$[6^5 = 4^2 + 4^2 + 88^2]_{H \cdot E_{No=19}}$$

$$[6^5 = 4^2 + 56^2 + 68^2]_{H \cdot E_{No=20}}$$

$$[6^5 = 8^2 + 44^2 + 76^2]_{H \cdot E_{No=21}}$$

$$[6^5 = 12^2 + 24^2 + 84^2]_{H \cdot E_{No=22}}$$

$$[6^5 = 20^2 + 40^2 + 76^2]_{H \cdot E_{No=23}}$$

$$[6^5 = 24^2 + 60^2 + 60^2]_{H \cdot E_{No=24}}$$

$$[6^5 = 36^2 + 36^2 + 72^2]_{H \cdot E_{No=25}}$$

$$[6^5 = 44^2 + 52^2 + 56^2]_{H \cdot E_{No=26}}$$

$$[6^5 = 6^3 + 12^3 + 18^3]_{H \cdot E_{No=1}}$$

$$[9^5 = 27^3 + 27^3 + 27^3]_{H \cdot E_{No=2}}$$

$$[12^5 = 4^3 + 32^3 + 60^3]_{H \cdot E_{No=3}}$$

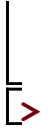
$$[12^5 = 18^3 + 30^3 + 60^3]_{H \cdot E_{No=4}}$$

$$[15^5 = 15^3 + 30^3 + 90^3]_{H \cdot E_{No=5}}$$

$$[15^5 = 39^3 + 40^3 + 86^3]_{H \cdot E_{No=6}}$$

$$[15^5 = 49^3 + 57^3 + 77^3]_{H \cdot E_{No=7}}$$

$$[3^5 = 3^4 + 3^4 + 3^4]_{H \cdot E_{No=1}}$$



$$[18^5 = 18^4 + 18^4 + 36^4]_{H \cdot E_{No=2}}$$

(2)