

> # $p1 + p2 + p3 = \text{prime}^2$ by $H \cdot E$ '20 - 11 - 1 :

> $c := 0$:for h from 1 to 1000000 do for e from 1 to 100 do for he from 2 to 5 do
if $\text{ithprime}(h) + \text{ithprime}(h + 1) + \text{ithprime}(h + 2) = \text{ithprime}(e)^{he}$ then $c := c + 1$:
 $\text{print}(\text{ithprime}(h) [\{h\} \text{thp}] + \text{ithprime}(h + 1) [\{h + 1\} \text{ithp}] + \text{ithprime}(h + 2) [\{h$
 $+ 2\} \text{thp}] = [\text{ithprime}(e) [\{e\} \text{thp}]] [\text{Prime}[H \cdot E](c)]^{he}$ fi:od:od:od:

$$13_{\{6\} \text{thp}} + 17_{\{7\} \text{ithp}} + 19_{\{8\} \text{thp}} = [7_{\{4\} \text{thp}}]_{\text{Prime}_{H \cdot E}}^2 \quad (1)$$

$$37_{\{12\} \text{thp}} + 41_{\{13\} \text{ithp}} + 43_{\{14\} \text{thp}} = [11_{\{5\} \text{thp}}]_{\text{Prime}_{H \cdot E}}^2 \quad (2)$$

$$277_{\{59\} \text{thp}} + 281_{\{60\} \text{ithp}} + 283_{\{61\} \text{thp}} = [29_{\{10\} \text{thp}}]_{\text{Prime}_{H \cdot E}}^2 \quad (3)$$

$$313_{\{65\} \text{thp}} + 317_{\{66\} \text{ithp}} + 331_{\{67\} \text{thp}} = [31_{\{11\} \text{thp}}]_{\text{Prime}_{H \cdot E}}^2 \quad (4)$$

$$439_{\{85\} \text{thp}} + 443_{\{86\} \text{ithp}} + 449_{\{87\} \text{thp}} = [11_{\{5\} \text{thp}}]_{\text{Prime}_{H \cdot E}}^3 \quad (5)$$

$$613_{\{112\} \text{thp}} + 617_{\{113\} \text{ithp}} + 619_{\{114\} \text{thp}} = [43_{\{14\} \text{thp}}]_{\text{Prime}_{H \cdot E}}^2 \quad (6)$$

$$7591_{\{965\} \text{thp}} + 7603_{\{966\} \text{ithp}} + 7607_{\{967\} \text{thp}} = [151_{\{36\} \text{thp}}]_{\text{Prime}_{H \cdot E}}^2 \quad (7)$$

$$8209_{\{1029\} \text{thp}} + 8219_{\{1030\} \text{ithp}} + 8221_{\{1031\} \text{thp}} = [157_{\{37\} \text{thp}}]_{\text{Prime}_{H \cdot E}}^2 \quad (8)$$

$$12157_{\{1455\} \text{thp}} + 12161_{\{1456\} \text{ithp}} + 12163_{\{1457\} \text{thp}} = [191_{\{43\} \text{thp}}]_{\text{Prime}_{H \cdot E}}^2 \quad (9)$$

$$23053_{\{2573\} \text{thp}} + 23057_{\{2574\} \text{ithp}} + 23059_{\{2575\} \text{thp}} = [263_{\{56\} \text{thp}}]_{\text{Prime}_{H \cdot E}}^2 \quad (10)$$

$$32233_{\{3457\} \text{thp}} + 32237_{\{3458\} \text{ithp}} + 32251_{\{3459\} \text{thp}} = [311_{\{64\} \text{thp}}]_{\text{Prime}_{H \cdot E}}^2 \quad (11)$$

$$34603_{\{3696\} \text{thp}} + 34607_{\{3697\} \text{ithp}} + 34613_{\{3698\} \text{thp}} = [47_{\{15\} \text{thp}}]_{\text{Prime}_{H \cdot E}}^3 \quad (12)$$

$$42953_{\{4490\} \text{thp}} + 42961_{\{4491\} \text{ithp}} + 42967_{\{4492\} \text{thp}} = [359_{\{72\} \text{thp}}]_{\text{Prime}_{H \cdot E}}^2 \quad (13)$$

$$44887_{\{4664\} \text{thp}} + 44893_{\{4665\} \text{ithp}} + 44909_{\{4666\} \text{thp}} = [367_{\{73\} \text{thp}}]_{\text{Prime}_{H \cdot E}}^2 \quad (14)$$

$$235747_{\{20887\} \text{thp}} + 235751_{\{20888\} \text{ithp}} + 235783_{\{20889\} \text{thp}} = [29_{\{10\} \text{thp}}]_{\text{Prime}_{H \cdot E}}^4 \quad (15)$$

$$3696493_{\{263166\} \text{thp}} + 3696523_{\{263167\} \text{ithp}} + 3696551_{\{263168\} \text{thp}} = [223_{\{48\} \text{thp}}]_{\text{Prime}_{H \cdot E}}^3 \quad (16)$$

$$4002991_{\{283353\} \text{thp}} + 4002997_{\{283354\} \text{ithp}} + 4003001_{\{283355\} \text{thp}} = [229_{\{50\} \text{thp}}]_{\text{Prime}_{H \cdot E}}^3 \quad (17)$$

$$4615267_{\{323448\} \text{thp}} + 4615283_{\{323449\} \text{ithp}} + 4615291_{\{323450\} \text{thp}} = [61_{\{18\} \text{thp}}]_{\text{Prime}_{H \cdot E}}^4 \quad (18)$$

$$10221397_{\{678277\} \text{thp}} + 10221443_{\{678278\} \text{ithp}} + 10221457_{\{678279\} \text{thp}} =$$

$$\begin{aligned}
 & [313_{\{65\} thp}]_{Prime_{H \cdot E}}^{(19)} \\
 & 14662309_{\{950264\} thp} + 14662331_{\{950265\} ithp} + 14662337_{\{950266\} thp} = \\
 & [353_{\{71\} thp}]_{Prime_{H \cdot E}}^{(20)}
 \end{aligned}
 \tag{1}$$