

> # $x^h + y^h + z^h = \text{prime}$ by $H \cdot E$ '20 - 7 - 23 :

> for h from 1 to 9 do $c := 0$: $\text{print}()$: $\text{print}(X^h + Y^h + Z^h = \text{prime})$: for x from 0 to 9 do
for y from $x + 1$ to 9 do for z from $y + 1$ to 9 do if $\text{isprime}(x^h + y^h + z^h)$ then $c := c$
 $+ 1$: $\text{print}(x[]^h + y[]^h + z[]^h = (x^h + y^h + z^h) \text{Prime}[H \cdot E](\text{No}\{c\}))$ fi:od:od:
od:od:

$X + Y + Z = \text{prime}$

$$1_{\circ} + 2_{\circ} = 3 \text{ Prime}_{H \cdot E}(\text{No } \{1\})$$

$$1_{\circ} + 4_{\circ} = 5 \text{ Prime}_{H \cdot E}(\text{No } \{2\})$$

$$1_{\circ} + 6_{\circ} = 7 \text{ Prime}_{H \cdot E}(\text{No } \{3\})$$

$$2_{\circ} + 3_{\circ} = 5 \text{ Prime}_{H \cdot E}(\text{No } \{4\})$$

$$2_{\circ} + 5_{\circ} = 7 \text{ Prime}_{H \cdot E}(\text{No } \{5\})$$

$$2_{\circ} + 9_{\circ} = 11 \text{ Prime}_{H \cdot E}(\text{No } \{6\})$$

$$3_{\circ} + 4_{\circ} = 7 \text{ Prime}_{H \cdot E}(\text{No } \{7\})$$

$$3_{\circ} + 8_{\circ} = 11 \text{ Prime}_{H \cdot E}(\text{No } \{8\})$$

$$4_{\circ} + 7_{\circ} = 11 \text{ Prime}_{H \cdot E}(\text{No } \{9\})$$

$$4_{\circ} + 9_{\circ} = 13 \text{ Prime}_{H \cdot E}(\text{No } \{10\})$$

$$5_{\circ} + 6_{\circ} = 11 \text{ Prime}_{H \cdot E}(\text{No } \{11\})$$

$$5_{\circ} + 8_{\circ} = 13 \text{ Prime}_{H \cdot E}(\text{No } \{12\})$$

$$6_{\circ} + 7_{\circ} = 13 \text{ Prime}_{H \cdot E}(\text{No } \{13\})$$

$$8_{\circ} + 9_{\circ} = 17 \text{ Prime}_{H \cdot E}(\text{No } \{14\})$$

$$1_{\circ} + 2_{\circ} + 4_{\circ} = 7 \text{ Prime}_{H \cdot E}(\text{No } \{15\})$$

$$1_{\circ} + 2_{\circ} + 8_{\circ} = 11 \text{ Prime}_{H \cdot E}(\text{No } \{16\})$$

$$1_{\circ} + 3_{\circ} + 7_{\circ} = 11 \text{ Prime}_{H \cdot E}(\text{No } \{17\})$$

$$1_{\circ} + 3_{\circ} + 9_{\circ} = 13 \text{ Prime}_{H \cdot E}(\text{No } \{18\})$$

$$1_{\circ} + 4_{\circ} + 6_{\circ} = 11 \text{ Prime}_{H \cdot E}(\text{No } \{19\})$$

$$1_{\circ} + 4_{\circ} + 8_{\circ} = 13 \text{ Prime}_{H \cdot E}(\text{No } \{20\})$$

$$1_{\circ} + 5_{\circ} + 7_{\circ} = 13 \text{ Prime}_{H \cdot E}(\text{No } \{21\})$$

$$1_{\circ} + 7_{\circ} + 9_{\circ} = 17 \text{ Prime}_{H \cdot E}(\text{No } \{22\})$$

$$2_{\circ} + 3_{\circ} + 6_{\circ} = 11 \text{ Prime}_{H \cdot E}(\text{No } \{23\})$$

$$2_{\circ} + 3_{\circ} + 8_{\circ} = 13 \text{ Prime}_{H \cdot E}(\text{No } \{24\})$$

$$2_{\circ} + 4_{\circ} + 5_{\circ} = 11 \text{ Prime}_{H \cdot E}(\text{No } \{25\})$$

$$2_{\circ} + 4_{\circ} + 7_{\circ} = 13 \text{ Prime}_{H \cdot E}(\text{No } \{26\})$$

$$2_{\circ} + 5_{\circ} + 6_{\circ} = 13 \text{ Prime}_{H \cdot E}(\text{No } \{27\})$$

$$2_{\circ} + 6_{\circ} + 9_{\circ} = 17 \text{ Prime}_{H \cdot E}(\text{No } \{28\})$$

$$2_{\circ} + 7_{\circ} + 8_{\circ} = 17 \text{ Prime}_{H \cdot E}(\text{No } \{29\})$$

$$2_{\circ} + 8_{\circ} + 9_{\circ} = 19 \text{ Prime}_{H \cdot E}(\text{No } \{30\})$$

$$3_{\circ} + 4_{\circ} + 6_{\circ} = 13 \text{ Prime}_{H \cdot E}(\text{No } \{31\})$$

$$\begin{aligned}
3_{\circ} + 5_{\circ} + 9_{\circ} &= 17 \text{ Prime}_{H \cdot E}(\text{No } \{32\}) \\
3_{\circ} + 6_{\circ} + 8_{\circ} &= 17 \text{ Prime}_{H \cdot E}(\text{No } \{33\}) \\
3_{\circ} + 7_{\circ} + 9_{\circ} &= 19 \text{ Prime}_{H \cdot E}(\text{No } \{34\}) \\
4_{\circ} + 5_{\circ} + 8_{\circ} &= 17 \text{ Prime}_{H \cdot E}(\text{No } \{35\}) \\
4_{\circ} + 6_{\circ} + 7_{\circ} &= 17 \text{ Prime}_{H \cdot E}(\text{No } \{36\}) \\
4_{\circ} + 6_{\circ} + 9_{\circ} &= 19 \text{ Prime}_{H \cdot E}(\text{No } \{37\}) \\
4_{\circ} + 7_{\circ} + 8_{\circ} &= 19 \text{ Prime}_{H \cdot E}(\text{No } \{38\}) \\
5_{\circ} + 6_{\circ} + 8_{\circ} &= 19 \text{ Prime}_{H \cdot E}(\text{No } \{39\}) \\
6_{\circ} + 8_{\circ} + 9_{\circ} &= 23 \text{ Prime}_{H \cdot E}(\text{No } \{40\})
\end{aligned}$$

$$X^2 + Y^2 + Z^2 = \text{prime}$$

$$\begin{aligned}
1_{\circ}^2 + 2_{\circ}^2 &= 5 \text{ Prime}_{H \cdot E}(\text{No } \{1\}) \\
1_{\circ}^2 + 4_{\circ}^2 &= 17 \text{ Prime}_{H \cdot E}(\text{No } \{2\}) \\
1_{\circ}^2 + 6_{\circ}^2 &= 37 \text{ Prime}_{H \cdot E}(\text{No } \{3\}) \\
2_{\circ}^2 + 3_{\circ}^2 &= 13 \text{ Prime}_{H \cdot E}(\text{No } \{4\}) \\
2_{\circ}^2 + 5_{\circ}^2 &= 29 \text{ Prime}_{H \cdot E}(\text{No } \{5\}) \\
2_{\circ}^2 + 7_{\circ}^2 &= 53 \text{ Prime}_{H \cdot E}(\text{No } \{6\}) \\
3_{\circ}^2 + 8_{\circ}^2 &= 73 \text{ Prime}_{H \cdot E}(\text{No } \{7\}) \\
4_{\circ}^2 + 5_{\circ}^2 &= 41 \text{ Prime}_{H \cdot E}(\text{No } \{8\}) \\
4_{\circ}^2 + 9_{\circ}^2 &= 97 \text{ Prime}_{H \cdot E}(\text{No } \{9\}) \\
5_{\circ}^2 + 6_{\circ}^2 &= 61 \text{ Prime}_{H \cdot E}(\text{No } \{10\}) \\
5_{\circ}^2 + 8_{\circ}^2 &= 89 \text{ Prime}_{H \cdot E}(\text{No } \{11\}) \\
7_{\circ}^2 + 8_{\circ}^2 &= 113 \text{ Prime}_{H \cdot E}(\text{No } \{12\}) \\
1_{\circ}^2 + 2_{\circ}^2 + 6_{\circ}^2 &= 41 \text{ Prime}_{H \cdot E}(\text{No } \{13\}) \\
1_{\circ}^2 + 3_{\circ}^2 + 7_{\circ}^2 &= 59 \text{ Prime}_{H \cdot E}(\text{No } \{14\}) \\
1_{\circ}^2 + 4_{\circ}^2 + 6_{\circ}^2 &= 53 \text{ Prime}_{H \cdot E}(\text{No } \{15\}) \\
1_{\circ}^2 + 5_{\circ}^2 + 9_{\circ}^2 &= 107 \text{ Prime}_{H \cdot E}(\text{No } \{16\}) \\
1_{\circ}^2 + 6_{\circ}^2 + 8_{\circ}^2 &= 101 \text{ Prime}_{H \cdot E}(\text{No } \{17\}) \\
1_{\circ}^2 + 7_{\circ}^2 + 9_{\circ}^2 &= 131 \text{ Prime}_{H \cdot E}(\text{No } \{18\}) \\
2_{\circ}^2 + 3_{\circ}^2 + 4_{\circ}^2 &= 29 \text{ Prime}_{H \cdot E}(\text{No } \{19\}) \\
2_{\circ}^2 + 4_{\circ}^2 + 9_{\circ}^2 &= 101 \text{ Prime}_{H \cdot E}(\text{No } \{20\}) \\
2_{\circ}^2 + 6_{\circ}^2 + 7_{\circ}^2 &= 89 \text{ Prime}_{H \cdot E}(\text{No } \{21\}) \\
2_{\circ}^2 + 8_{\circ}^2 + 9_{\circ}^2 &= 149 \text{ Prime}_{H \cdot E}(\text{No } \{22\})
\end{aligned}$$

$$3^2 + 4^2 + 6^2 = 61 \text{ Prime}_{H \cdot E}(\text{No } \{23\})$$

$$3^2 + 4^2 + 8^2 = 89 \text{ Prime}_{H \cdot E}(\text{No } \{24\})$$

$$3^2 + 5^2 + 7^2 = 83 \text{ Prime}_{H \cdot E}(\text{No } \{25\})$$

$$3^2 + 6^2 + 8^2 = 109 \text{ Prime}_{H \cdot E}(\text{No } \{26\})$$

$$3^2 + 7^2 + 9^2 = 139 \text{ Prime}_{H \cdot E}(\text{No } \{27\})$$

$$4^2 + 6^2 + 7^2 = 101 \text{ Prime}_{H \cdot E}(\text{No } \{28\})$$

$$6^2 + 7^2 + 8^2 = 149 \text{ Prime}_{H \cdot E}(\text{No } \{29\})$$

$$6^2 + 8^2 + 9^2 = 181 \text{ Prime}_{H \cdot E}(\text{No } \{30\})$$

$$X^3 + Y^3 + Z^3 = \text{prime}$$

$$1^3 + 2^3 + 4^3 = 73 \text{ Prime}_{H \cdot E}(\text{No } \{1\})$$

$$1^3 + 2^3 + 8^3 = 521 \text{ Prime}_{H \cdot E}(\text{No } \{2\})$$

$$1^3 + 3^3 + 9^3 = 757 \text{ Prime}_{H \cdot E}(\text{No } \{3\})$$

$$1^3 + 4^3 + 6^3 = 281 \text{ Prime}_{H \cdot E}(\text{No } \{4\})$$

$$1^3 + 4^3 + 8^3 = 577 \text{ Prime}_{H \cdot E}(\text{No } \{5\})$$

$$2^3 + 3^3 + 6^3 = 251 \text{ Prime}_{H \cdot E}(\text{No } \{6\})$$

$$2^3 + 3^3 + 8^3 = 547 \text{ Prime}_{H \cdot E}(\text{No } \{7\})$$

$$2^3 + 4^3 + 5^3 = 197 \text{ Prime}_{H \cdot E}(\text{No } \{8\})$$

$$2^3 + 5^3 + 6^3 = 349 \text{ Prime}_{H \cdot E}(\text{No } \{9\})$$

$$2^3 + 6^3 + 9^3 = 953 \text{ Prime}_{H \cdot E}(\text{No } \{10\})$$

$$2^3 + 7^3 + 8^3 = 863 \text{ Prime}_{H \cdot E}(\text{No } \{11\})$$

$$2^3 + 8^3 + 9^3 = 1249 \text{ Prime}_{H \cdot E}(\text{No } \{12\})$$

$$3^3 + 4^3 + 6^3 = 307 \text{ Prime}_{H \cdot E}(\text{No } \{13\})$$

$$3^3 + 5^3 + 9^3 = 881 \text{ Prime}_{H \cdot E}(\text{No } \{14\})$$

$$4^3 + 5^3 + 8^3 = 701 \text{ Prime}_{H \cdot E}(\text{No } \{15\})$$

$$4^3 + 6^3 + 9^3 = 1009 \text{ Prime}_{H \cdot E}(\text{No } \{16\})$$

$$4^3 + 7^3 + 8^3 = 919 \text{ Prime}_{H \cdot E}(\text{No } \{17\})$$

$$5^3 + 6^3 + 8^3 = 853 \text{ Prime}_{H \cdot E}(\text{No } \{18\})$$

$$X^4 + Y^4 + Z^4 = \text{prime}$$

$$1^4 + 2^4 = 17 \text{ Prime}_{H \cdot E}(\text{No } \{1\})$$

$$1^4 + 4^4 = 257 \text{ Prime}_{H \cdot E}(\text{No } \{2\})$$

$$1^4 + 6^4 = 1297 \text{ Prime}_{H \cdot E}(\text{No } \{3\})$$

$$2^4 + 3^4 = 97 \text{ Prime}_{H \cdot E}(\text{No } \{4\})$$

$$2^4 + 5^4 = 641 \text{ Prime}_{H \cdot E}(\text{No } \{5\})$$

$$2^4 + 7^4 = 2417 \text{ Prime}_{H \cdot E}(\text{No } \{6\})$$

$$2^4 + 9^4 = 6577 \text{ Prime}_{H \cdot E}(\text{No } \{7\})$$

$$3^4 + 4^4 = 337 \text{ Prime}_{H \cdot E}(\text{No } \{8\})$$

$$3^4 + 8^4 = 4177 \text{ Prime}_{H \cdot E}(\text{No } \{9\})$$

$$4^4 + 5^4 = 881 \text{ Prime}_{H \cdot E}(\text{No } \{10\})$$

$$4^4 + 7^4 = 2657 \text{ Prime}_{H \cdot E}(\text{No } \{11\})$$

$$5^4 + 8^4 = 4721 \text{ Prime}_{H \cdot E}(\text{No } \{12\})$$

$$6^4 + 7^4 = 3697 \text{ Prime}_{H \cdot E}(\text{No } \{13\})$$

$$8^4 + 9^4 = 10657 \text{ Prime}_{H \cdot E}(\text{No } \{14\})$$

$$1^4 + 4^4 + 6^4 = 1553 \text{ Prime}_{H \cdot E}(\text{No } \{15\})$$

$$1^4 + 5^4 + 9^4 = 7187 \text{ Prime}_{H \cdot E}(\text{No } \{16\})$$

$$1^4 + 6^4 + 8^4 = 5393 \text{ Prime}_{H \cdot E}(\text{No } \{17\})$$

$$1^4 + 7^4 + 9^4 = 8963 \text{ Prime}_{H \cdot E}(\text{No } \{18\})$$

$$2^4 + 3^4 + 4^4 = 353 \text{ Prime}_{H \cdot E}(\text{No } \{19\})$$

$$2^4 + 4^4 + 9^4 = 6833 \text{ Prime}_{H \cdot E}(\text{No } \{20\})$$

$$2^4 + 6^4 + 9^4 = 7873 \text{ Prime}_{H \cdot E}(\text{No } \{21\})$$

$$3^4 + 7^4 + 9^4 = 9043 \text{ Prime}_{H \cdot E}(\text{No } \{22\})$$

$$5^4 + 7^4 + 9^4 = 9587 \text{ Prime}_{H \cdot E}(\text{No } \{23\})$$

$$6^4 + 7^4 + 8^4 = 7793 \text{ Prime}_{H \cdot E}(\text{No } \{24\})$$

$$6^4 + 8^4 + 9^4 = 11953 \text{ Prime}_{H \cdot E}(\text{No } \{25\})$$

$$X^5 + Y^5 + Z^5 = \text{prime}$$

$$1^5 + 2^5 + 8^5 = 32801 \text{ Prime}_{H \cdot E}(\text{No } \{1\})$$

$$2^5 + 4^5 + 7^5 = 17863 \text{ Prime}_{H \cdot E}(\text{No } \{2\})$$

$$3^5 + 4^5 + 6^5 = 9043 \text{ Prime}_{H \cdot E}(\text{No } \{3\})$$

$$3^5 + 5^5 + 9^5 = 62417 \text{ Prime}_{H \cdot E}(\text{No } \{4\})$$

$$3^5 + 6^5 + 8^5 = 40787 \text{ Prime}_{H \cdot E}(\text{No } \{5\})$$

$$3^5 + 7^5 + 9^5 = 76099 \text{ Prime}_{H \cdot E}(\text{No } \{6\})$$

$$4^5 + 7^5 + 8^5 = 50599 \text{ Prime}_{H \cdot E}(\text{No } \{7\})$$

$$5^5 + 6^5 + 8^5 = 43669 \text{ Prime}_{H \cdot E}(\text{No } \{8\})$$

$$X^6 + Y^6 + Z^6 = \text{prime}$$

$$1^6 + 4^6 + 6^6 = 50753 \text{ Prime}_{H \cdot E}(\text{No } \{1\})$$

$$1^6 + 6^6 + 8^6 = 308801 \text{ Prime}_{H \cdot E}(\text{No } \{2\})$$

$$2^6 + 3^6 + 4^6 = 4889 \text{ Prime}_{H \cdot E}(\text{No } \{3\})$$

$$2^6 + 3^6 + 8^6 = 262937 \text{ Prime}_{H \cdot E}(\text{No } \{4\})$$

$$3^6 + 4^6 + 6^6 = 51481 \text{ Prime}_{H \cdot E}(\text{No } \{5\})$$

$$4^6 + 5^6 + 6^6 = 66377 \text{ Prime}_{H \cdot E}(\text{No } \{6\})$$

$$4^6 + 8^6 + 9^6 = 797681 \text{ Prime}_{H \cdot E}(\text{No } \{7\})$$

$$6^6 + 8^6 + 9^6 = 840241 \text{ Prime}_{H \cdot E}(\text{No } \{8\})$$

$$X^7 + Y^7 + Z^7 = \text{prime}$$

$$2^7 + 3^7 + 8^7 = 2099467 \text{ Prime}_{H \cdot E}(\text{No } \{1\})$$

$$2^7 + 6^7 + 9^7 = 5063033 \text{ Prime}_{H \cdot E}(\text{No } \{2\})$$

$$2^7 + 8^7 + 9^7 = 6880249 \text{ Prime}_{H \cdot E}(\text{No } \{3\})$$

$$3^7 + 7^7 + 9^7 = 5608699 \text{ Prime}_{H \cdot E}(\text{No } \{4\})$$

$$4^7 + 6^7 + 7^7 = 1119863 \text{ Prime}_{H \cdot E}(\text{No } \{5\})$$

$$6^7 + 8^7 + 9^7 = 7160057 \text{ Prime}_{H \cdot E}(\text{No } \{6\})$$

$$X^8 + Y^8 + Z^8 = \text{prime}$$

$$1^8 + 2^8 = 257 \text{ Prime}_{H \cdot E}(\text{No } \{1\})$$

$$1^8 + 4^8 = 65537 \text{ Prime}_{H \cdot E}(\text{No } \{2\})$$

$$5^8 + 6^8 = 2070241 \text{ Prime}_{H \cdot E}(\text{No } \{3\})$$

$$1^8 + 4^8 + 6^8 = 1745153 \text{ Prime}_{H \cdot E}(\text{No } \{4\})$$

$$2^8 + 3^8 + 4^8 = 72353 \text{ Prime}_{H \cdot E}(\text{No } \{5\})$$

$$2^8 + 6^8 + 7^8 = 7444673 \text{ Prime}_{H \cdot E}(\text{No } \{6\})$$

$$2^8 + 6^8 + 9^8 = 44726593 \text{ Prime}_{H \cdot E}(\text{No } \{7\})$$

$$5^8 + 7^8 + 9^8 = 49202147 \text{ Prime}_{H \cdot E}(\text{No } \{8\})$$

$$6^8 + 8^8 + 9^8 = 61503553 \text{ Prime}_{H \cdot E}(\text{No } \{9\})$$

$$X^9 + Y^9 + Z^9 = \text{prime}$$

$$1^9 + 2^9 + 4^9 = 262657 \text{ Prime}_{H \cdot E}(\text{No } \{1\})$$


$$2^9 + 3^9 + 6^9 = 10097891 \text{ Prime}_{H \cdot E}(\text{No } \{2\})$$

$$4^9 + 5^9 + 8^9 = 136432997 \text{ Prime}_{H \cdot E}(\text{No } \{3\})$$

$$4^9 + 6^9 + 9^9 = 397760329 \text{ Prime}_{H \cdot E}(\text{No } \{4\})$$

$$6^9 + 8^9 + 9^9 = 531715913 \text{ Prime}_{H \cdot E}(\text{No } \{5\})$$

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