

–case A: $L = \{2N - 1, 2N - 1, 2N\}$

$$(Py) \ (2N - 1)^2 = N^2 + h^2$$

$$\Rightarrow \exists m > n \ 2N - 1 = m^2 + n^2 \text{ and } N = m^2 - n^2 \ (1)$$

other case $N = 2 \times m \times n$ impossible due to $\equiv 3$

$$(1) \Rightarrow m^2 = 3 \times n^2 + 1 \Rightarrow \frac{n}{m} \text{ approximate } \frac{1}{\sqrt{3}}$$

With the continuous fraction for $\frac{1}{\sqrt{3}}$ we found $n, d \ d^2 = n^2 + 1$

$$m = d ; N = m^2 - n^2 ; 2N - 1 = m^2 + n^2 ; h = 2 \times m \times n ; P = 6N - 2$$

–case B: $L = \{2N + 1, 2N + 1, 2N\}$

$$(Py) \ (2N + 1)^2 = N^2 + h^2$$

$$\Rightarrow \exists m > n \ 2N + 1 = m^2 + n^2 \text{ and } N = 2 \times m \times n \ (2)$$

other case $N = m^2 - n^2$ impossible due to $\equiv 4$

$$(2) \Rightarrow m^2 + n^2 - 4m \times n = 1 \Leftrightarrow (m - 2n)^2 = 3 \times n^2 + 1 \Rightarrow \frac{n}{m - 2n} \text{ approximate } \frac{1}{\sqrt{3}}$$

With the continuous fraction for $\frac{1}{\sqrt{3}}$ we found $n, d \ d^2 = n^2 + 1$

$$m = d + 2n ; N = 2 \times m \times n ; 2N + 1 = m^2 + n^2 ; h = m^2 - n^2 ; P = 6N + 2$$

$$P_i^{\alpha_i} \Rightarrow \frac{P_i^{\alpha_i} - 1}{P_i - 1}$$

$$\frac{k-1}{k+1} \times \binom{2k}{k}$$

$$C(2n) = \sum_{k=2}^{k=n} \frac{k-1}{k+1} \times \binom{2k}{k} \times \binom{2n}{2k}$$

$$P \rightarrow SumDiv[P]$$