Lagrange’s Four-Square Theorem

The fact that any positive integer has a representation as the sum of at most four positive squares (i.e. squares of positive integers) is known as Lagrange's Four-Square Theorem. The first published proof of the theorem was given by Joseph-Louis Lagrange in 1770. Your mission however is not to explain the original proof nor to discover a new proof but to show that the theorem holds for some specific numbers by counting how many such possible representations there are. For a given positive integer n, you should report the number of all representations of n as the sum of at most four positive squares. The order of addition does not matter, e.g. you should consider 4^2 + 3^2 and 3^2 + 4^2 are the same representation.

For example, let's check the case of 25. This integer has just three representations 1^2+2^2+2^2+4^2, 3^2 + 4^2, and 5^2. Thus you should report 3 in this case. Be careful not to count 4^2 + 3^2 and 3^2 + 4^2 separately.

Input

The input is composed of at most 255 lines, each containing a single positive integer less than 2^15 , followed by a line containing a single zero. The last line is not a part of the input data.

Output

The output should be composed of lines, each containing a single integer. No other characters should appear in the output. The output integer corresponding to the input integer n is the number of all representations of n as the sum of at most four positive squares.

Example

Input:

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1
25
2003
211
20007
0
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Output:

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1
3
48
7
738
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