

Diophantine equation

Problem code: HS09EQ

Sometimes solving a Diophantine equation is very hard. But, for example, the equation $a+b^2+c^3+d^4=n$ has a trivial solution for every value of n . Your task is to determine the number of solutions of the equation for each given n , assuming that in the equation all the values a , b , c and d are non-negative integers.

Input

The first line of input contains an integer T , representing the number of test cases ($T < 20000$). The following T lines contain one non-negative integer n each, where $n < 10^9$.

Output

Output T lines, each containing the number of solutions of the respective equation for n .

Example

Input :

```
5
0
1
10
100
1000
```

Output :

```
1
4
19
148
1476
```

Scoring

For solving this problem you will score **10** points.

Added by: Robert Gerbicz

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Time limit: 1s-4s

Source
limit: 50000B

Languages: SED C99 strict C++ 4.0.0-8 C++ 4.3.2 TCL SCALA NICE NEM PHP SCM guile LISP
sbc1 LISP clisp ERL TECS TEXT DOC PDF PS PERL 6 JS

Resource: High School Programming League