

Problem E

Stupid Sequence

Input: Standard Input
Output: Standard Output

A stupid sequence is a sequence generated by a function defined by a polynomial as shown below:

$$f(x) = a_0 + a_1x + a_2x^2 + a_3x^3 + a_4x^4 + a_5x^5 + a_6x^6$$

So the stupid sequence is actually $f(1), f(2), f(3), f(4), \dots$

You can assume that for all i ($0 \leq i \leq 6$), $0 \leq a_i \leq 1000$.

In this problem you will be given the first 1500 terms of stupid sequence, and you will have to find the values of $a_0, a_1, a_2, a_3, a_4, a_5, a_6$.

Input

First line of the input file contains an integer N ($0 < N < 101$) which denotes the total number of input set. The description of each set is given below:

Each set contains 1500 lines of inputs. Each line contains a single integer. The i -th line of a set denotes the i -th element of a stupid sequence. All these integers fit in 64-bit unsigned integer. There is a blank line after the input of each set.

Output

For each set of input produce one line of output. This line contains the values of $a_0, a_1, a_2, a_3, a_4, a_5, a_6$. All these values are non-negative and less than 1001. If such values are not found print a line "This is a smart sequence!" instead.

Sample Input

```
sample.in
//Too large to paste here so
//download from the link above
```

Output for Sample Input

```
1 0 0 0 0 0 0
0 1 1 0 0 0 0
This is a smart sequence!
```

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