A number N is an **Armstrong number of order** n (n being the number of digits) if

$$abcd\ldots = a^n + b^n + c^n + d^n + \ldots = N$$

For example, 153 is an Armstrong number of order 3 because

$$1^3 + 5^3 + 3^3 = 1 + 125 + 27 = 153.$$

Likewise, 54748 is an Armstrong number of order 5 because

$$5^5 + 4^5 + 7^5 + 4^5 + 8^5 = 3125 + 1024 + 16807 + 1024 + 32768 = 54748.$$

In this problem you have to determine whether a given number is Armstrong number or not.

Input

The first line of input is an integer, T that determines the number of test cases. Each of the next T lines contain a positive integer N, where $N \leq 1000000000$.

Output

For each line of input, there will be one line of output. If N is an Armstrong number print 'Armstrong', otherwise print 'Not Armstrong' (without the quotes).

Sample Input

```
3
153
2732
54748
```

Sample Output

```
Armstrong
Not Armstrong
Armstrong
```