
1. Armstrong Numbers

Program Name: Armstrong.java

Input File: armstrong.dat

An Armstrong number, also known as a narcissistic number, is a number that is equal to the sum of its own digits each raised to the power of the number of digits.

For example, 153 is an Armstrong number:

- 153 has 3 digits.
- Raise each digit to the third power.
- Sum the results.
- $1^3 + 5^3 + 3^3 = 1 + 125 + 27 = 153$

Input

- The first line will contain a single integer n that indicates the number of lines that follow.
- Each of the following n lines will consist of a single integer.
- All integers will be greater than or equal to 0 and less than 200,000,000.

Output

For each integer input, print “ARMSTRONG” if the integer is an Armstrong number or print “ NOT AN ARMSTRONG” if the integer is not an Armstrong number.

Example Input File

```
5
153
222
10000
5
1634
```

Example Output to Screen

```
ARMSTRONG
NOT AN ARMSTRONG
NOT AN ARMSTRONG
ARMSTRONG
ARMSTRONG
```