Your Rank is Pure

> *Pontius*: You know, I like this number 127, I don't know why.
> *Woland*: Well, that is an object so pure. You know the *prime numbers*.
> *Pontius*: Surely I do. Those are the objects possessed by our ancient masters hundreds of years ago. Oh, yes, why then? 127 is indeed a prime number as I was told.
> *Woland*: Not... only... that. 127 is the 31st prime number; then, 31 is itself a prime, it is the 11th; and 11 is the 5th; 5 is the 3rd; 3, you know, is the second; and finally 2 is the 1st.
> *Pontius*: Heh, that is indeed... purely prime.

The game can be played on any subset S of positive integers. A number in S is considered pure with respect to S if, starting from it, you can continue taking its rank in S, and get a number that is also in S, until in finite steps you hit the number 1, which is not in S.

When **n** is given, in how many ways you can pick S, a subset of {2, 3, ..., n}, so that **n** is pure, with respect to S? The answer might be a big number, you need to output it modulo 100003.

Input

The first line of the input gives the number of test cases, **T**. **T** lines follow. Each contains a single integer **n**.

Output

For each test case, output one line containing "Case #x: y", where x is the case number (starting from 1) and y is the answer as described above.

Limits

T ≤ 200.

2 ≤ **n** ≤ 500.

Sample

Input:
2
5
6

Output:
Case #1: 5
Case #2: 8

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