Money in the Hat

Input file:	`standard input`
Output file:	`standard output`
Time limit:	2 seconds
Memory limit:	1024 megabytes

Lucy's company is organizing a Christmas Lottery. There are N employees participating, and during the event, N notes will be put in a hat, one for each employee. The i-th note will be worth i dollars. Then the employees will, in a random order, draw a random note from the hat.

Or at least they should. However, Lucy does not play by the rules, so in her turn she plans to peek into the hat and take the note with the highest value.

Now she is wondering what the expected value of her note is, assuming all her colleagues do not cheat. Unfortunately, she cannot solve this problem the usual corporate way (i.e. using Excel), so she asked you for help.

Input

The first line of input contains the number of test cases Z ($1 \leq Z \leq 10^6$). The descriptions of the test cases follow.

The first and only line of a test case contains a number of employees N ($1 \leq N \leq 10^6$).

Output

It can be shown that the expected value (in dollars) of Lucy's note can be expressed as an irreducible fraction $\frac{P}{Q}$ where P, Q are integers and Q is coprime with 998244353.

For each test case, print in a single line the number $P \cdot Q^{-1} \mod 998244353$.

Example

standard input	standard output
2 2 10	249561090 390067951

Note

In the first test case, the expected value of the note is $\frac{7}{4}$.