Pudding Store

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	512 megabytes

159 is a boy. He has a pudding store.

There are n different puddings numbered from 1 to n lined up in a row in the pudding store. (Note that the i-th pudding in the row may not be the pudding with the number i.) Now, n students numbered from 1 to n are coming to sample these puddings in a specific way. That is, for the i-th student, he will sample each one of the first i puddings in the row. Sampling the pudding numbered i gives the sampler a satisfaction value of $2 \times i$. And if the sum of all satisfaction values that the i-th student gets is divisible by i, we would say that the i-th student is satisfied.

Now, 159 wants to know, how many different arrangements of the puddings in a row that every student will be satisfied after sampling. Two arrangements are different, if there exists a pudding that its position is different. Note that the number of arrangements may be very large so he just needs the remainder after division by 998244353 of the result.

Input

Each test contains multiple test cases. The first line contains the number of test cases t ($1 \le t \le 10$). Description of the test cases follows.

The first and only line of each test case contains one integer n ($1 \le n \le 10^9$) — the number of the puddings and the students.

Output

For each test case, print a single line that contains one integer — the number of satisfying arrangements modulo 998244353.

Example

standard input	standard output
3 1 2 3	1 2 6