

Permutation Counting (Easy)

This is the easy version of the problem. Here K is fixed to be 3.

You are given 2 integers, N and K ($K = 3$).

Count the number of permutations P of the integers $[1, N]$ satisfying the following condition:

- $(P_i + P_{i+1}) \bmod K \neq 0$ for all $1 \leq i < N$

Since the answer may be large, output it modulo 998244353.

Input Format

- The first line of input will contain a single integer T , denoting the number of test cases.
- The first and only line of each test case contains 2 integers - N and K .



Output Format

For each test case, output on a new line the number of valid permutations modulo 998244353.

Constraints

- $1 \leq T \leq 10^4$
- $2 \leq N \leq 2 \cdot 10^5$
- $K = 3$
- The sum of N over all test cases does not exceed $2 \cdot 10^5$

Sample 1:

Input 	Output 
6	0
2 3	2
3 3	4
4 3	80
6 3	72576
10 3	252292730
190000 3	

Explanation:

Test Case 1 : There are no valid permutations. The 2 possible permutations $[1, 2]$ and $[2, 1]$, both have $(P_1 + P_2) \bmod 3 = 0$.

Test Case 2 : The 2 valid permutations are $[1, 3, 2]$ and $[2, 3, 1]$.