

Coding Arena



A B C D E F G H

Problem : Grandpa's Candy Distribution

Rahul is considered to be the luckiest kid around, by his classmates - his grandpa has a candy factory! And the factory produces a thousand different flavours of candies!

Rahul's birthday is around the corner and the entire school is excited to receive the candies. Rahul approaches his grandpa and asks for candies to be distributed on his birthday.

His grandpa tasks him with a problem - he says that he will give him as many candies as he wants (N) of all distinct flavours for as many students in his school (K) if he can tell him the sum of the following:

- I. The number of ways there are to choose $K/2$ candies out of $N/2$ disregarding the order of selection, and
- II. The number of ways there are to choose $K/2$ candies out of $N/2$ taking into account the order of selection.

Give the answer, modulo 1000000007. Assume integer division while halving N and K.

Input Format:

First line contains a positive integer T determining the number of test cases
 Next T lines contain two positive integers each, viz. N and K separated by white space.

Output Format:

For each test case, print a single integer per line denoting the sum of total number of ways to distribute N candies among K students as per grandpa's method, modulo 1000000007

Constraints:

1 $\leq T \leq 1,000,000$

2 $\leq N \leq 2000$

2 $\leq K \leq 1000$

Sample Input and Output

SNo.	Input	Output
1	2 13 9 10 6	375 70

Note:

Please do not use package and namespace in your code. For object oriented languages your code should be written in one class.

Note:

Participants submitting solutions in C language should not use functions from `<conio.h>` / `<process.h>` as these files do not exist in gcc

Note:

For C and C++, return type of main() function should be int.

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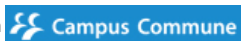
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