E • Permutation Descent Counts

Given a positive integer, ***N***, a *permutation* of order ***N*** is a one-to-one (and thus *onto*) function from the set of integers from **1** to ***N*** to itself. If ***p*** is such a function, we represent the function by a list of its values:

$$[\ p(1)\ \ p(2)\ \ldots\ p(N)\ ]$$

For example,

[**5 6 2 4 7 1 3**] represents the function from { **1 … 7** } to itself which takes **1** to **5**, **2** to **6**, … , **7** to **3**.

For any permutation ***p***, a *descent* of ***p*** is an integer ***k*** for which ***p***(***k***) > ***p***(***k***+**1**). For example, the permutation [**5 6 2 4 7 1 3**] has a descent at **2** (**6** > **2**) and **5** (**7** > **1**).

For permutation ***p***, ***des***(***p***) is the number of descents in ***p***. For example, ***des***([**5 6 2 4 7 1 3**]) = **2**. The *identity* permutation is the only permutation with ***des***(***p***) = 0. The *reversing* permutation with ***p***(***k***) = ***N***+**1**-***k*** is the only permutation with ***des***(***p***) = **N**-**1**.

The *permutation descent count* (*PDC*) for given order ***N*** and value ***v*** is the number of permutations ***p*** of order ***N*** with ***des***(***p***) = ***v***. For example:

PDC(**3, 0**) = **1** { [**1 2 3**] }
PDC(**3, 1**) = **4** { [**1 3 2**], [**2 1 3**], [**2 3 1**], **3 1 2**] }
PDC(**3, 2**) = **1** { [**3 2 1**] }

Write a program to compute the *PDC* for inputs ***N*** and ***v***. To avoid having to deal with very large numbers, your answer (and your intermediate calculations) will be computed **modulo 1001113**.

Input

The first line of input contains a single integer P, ($1 \le P \le 1000$), which is the number of data sets that follow. Each data set should be processed identically and independently.

Each data set consists of a single line of input. It contains the data set number, K, followed by the integer order, N ($2 \le N \le 100$), followed by an integer value, v ($0 \le v \le N-1$).

Output

For each data set there is a single line of output. The single output line consists of the data set number, K, followed by a single space followed by the *PDC* of N and v ***modulo*** **1001113** as a decimal integer.

Sample Input	Sample Output
4 1 3 1 2 5 2 3 8 3 4 99 50	1 4 2 66 3 15619 4 325091