III Akademickie Mistrzostwa Polski w Programowaniu Zespołowym

TRAINING PROBLEM B

Permutations

Let $A = [a_1, a_2, \ldots, a_n]$ be a permutation of integers $1, 2, \ldots, n$. A pair of indices (i, j), $1 \leq i < j \leq n$, is an *inversion* of the permutation A if $a_i > a_j$. We are given integers $n > 0$ and $k \geq 0$. What is the number of n-element permutations containing exactly k inversions?

Example

The number of 4-element permutations with exactly 1 inversion equals 3.

Task

Write a program which for each data set from a sequence of several data sets:

- reads integers n and k from the text file `B.IN`;
- computes the number of n-element permutations with exactly k inversions;
- writes the result to the text file `B.OUT`.

Input

The first line of the input file `B.IN` contains one integer d, $1 \leq d \leq 10$, which is the number of data sets. The data sets follow. Each data set occupies one line of the input file and contains two integers n ($1 \leq n \leq 12$) and k ($0 \leq k \leq 98$) separated by a single space.

Output

The i-th line of the output file `B.OUT` should contain one integer—the number of n-element permutations with exactly k inversions.

Example

For the input file `B.IN`:

```
1
4 1
```

the correct answer is:

```
3
```