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## Tom and Series ✓

Problem code: CDQU05

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Tom likes to find the new math series. Sometimes he modifies famous known series. Today he modified the Fibonacci series and generates a new series named Tom series.

$$T_1 = 0$$

$$T_2 = 1$$

$$T_3 = 1 * 2 + 0 * 1 = 2$$

$$T_n = T_{n-1} * (n-1) + T_{n-2} * (n-2)$$

Now Tom wants to count the frequency of given integer **K** at Nth position in series.

### Input

- First line of input contains an integer **T** denotes the number of test cases.
- Each **T** lines contains two integer values **K** and **N**.

### Output

- For each test case print the frequency of the **K** at Nth position in **T** series.

### Constraints

- $1 \leq T \leq 20$
- $0 \leq K \leq 100$
- $3 \leq N \leq 21$

### Example

Input:

2  
0 13  
20 16

Output:

2  
1

### Explanation

**Example**

**case 1.** In the first test case 13th term of the T series will be 1772006854 and frequency of 0 on this number is 2.

**case 2.** In the second test case 16th term of the T series will be 5874202721042 and frequency of 20 on this number is 1.

Author: kripa432

Tags: kripa432

Date Added: 7-04-2016

Time Limit: 1 sec

Source Limit: 50000 Bytes

Languages: C, CPP 4.9.2, JAVA

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