Puppy and Sum

Problem Code: **PPSUM**

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Yesterday, puppy Tuzik learned a magically efficient method to find the sum of the integers from **1** to **N**. He denotes it as **sum(N)**. But today, as a true explorer, he defined his own new function: **sum(D, N)**, which means the operation **sum** applied **D** times: the first time to **N**, and each subsequent time to the result of the previous operation.

For example, if **D = 2** and **N = 3**, then **sum(2, 3)** equals to **sum(sum(3)) = sum(1 + 2 + 3) = sum(6) = 21**.

Tuzik wants to calculate some values of the **sum(D, N)** function. Will you help him with that?

Input

The first line contains a single integer **T**, the number of test cases. Each test case is described by a single line containing two integers **D** and **N**.

Output

For each testcase, output one integer on a separate line.

Constraints

- **1 ≤ T ≤ 16**
- **1 ≤ D, N ≤ 4**

Example

```
Input:
2
1 4
2 3

Output:
10
21
```

Explanation:

The first test case: sum(1, 4) = sum(4) = 1 + 2 + 3 + 4 = 10.

The second test case: sum(2, 3) = sum(sum(3)) = sum(1 + 2 + 3) = sum(6) = 1 + 2 + 3 + 4 + 5 + 6 = 21.

All submissions for this problem are available.

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