Do You Copy?

ZPRAC-16-17-Lab6

[20 points]

Bhuvesh and Rohan are cyber-security interns at the FBI for the semester. They decide to hack into their fellow tutors' systems and see what they are upto, as they both know that their friends are not as innocent as they look while teaching :)

Their first victim is Vikas. They find something very weird on his home machine - Assignment solutions for all the ongoing first-year courses! Vikas, moved by his Counselling Service term last year, has decided to help out his juniors in the ultimate way. Bhuvesh and Rohan are touched, and they decide to help him out in any way possible.

For hiding his actions, Vikas always picks a subset of first-years from the entire batch, and gives the solutions to them. We all know that if the total number of first-years are n and the number of students picked by Vikas is r, then the number of ways Vikas can pick the first-years is given by $\binom{n}{r}$ i.e. the binomial coefficient $(n!r!(n-r)!)$. Vikas uses this value to decide what r to pick.

But wait, Vikas has got his code all wrong! He is computing incorrect values. Bhuvesh and Rohan ask you to write a correct program for the same, so they can find the bug in Vikas's code and help keep him safe.

You are given an integer N. You will be provided N number of pairs of integers, namely n and r. You need to output the $\binom{n}{r}$ of every such pair, in the REVERSE order i.e., first output the value of the last pair, then the second-last pair, and so on...

The input consists of multiple lines. The first line contains the integer N. Each of the following N lines contain two space-separated integers n and r.

The output should consist of N lines, with each line containing a single integer corresponding to the value required.

IMPORTANT NOTE : You need to use functions to calculate $\binom{n}{r}$. Failure to conform to this will result in an appropriate deduction of marks

Constraints:

$1 \leq N \leq 100$
$0 \leq r \leq n \leq 12$

Example :
Input:
4
2 1
3 2
4 2
5 3

Output:
10
6
3
2

Explanation:
Since we need to output values in the reverse order, we first output the (nr) value of the last pair i.e. (53), then (42), followed by (32) and (21)