

## Problem K. Decoding The Message

Input file: *standard input*  
Output file: *standard output*  
Time limit: 1 second  
Memory limit: 512 mebibytes

Aliens connected with people and sent a message containing the answer to “The Ultimate Question of Life, the Universe, and Everything”.

People received  $n$  bytes (integers from 0 to 255 inclusive). The decoding algorithm is the following:

- Let us consider all  $n!$  permutations of received bytes.
- Consider each permutation as a number written in base 256. Numbers can be equal.
- Multiply all these numbers modulo 65 535.
- The result is the decoded message!

For each byte  $i$ , you are given the number  $c_i$  of received bytes  $i$ . Please decode the message.

### Input

The first line contains a single integer  $t$  ( $1 \leq t \leq 100$ ) — the number of test cases. Description of test cases follows.

The first line of each test case contains a single integer  $k$  ( $1 \leq k \leq 256$ ) — the number of bytes  $i$  such that  $c_i \neq 0$ .

Each of the next  $k$  lines contains two integers  $i, c_i$  ( $0 \leq i \leq 255, 1 \leq c_i \leq 10^9$ ). It is guaranteed that all given values  $i$  are different.

For all other  $256 - k$  bytes, the numbers  $c_i$  are equal to 0.

It is guaranteed that  $\sum_{i=0}^{255} c_i = n \leq 10^9$ .

### Output

For each test case, print a single integer — the decoded message.

### Example

standard input	standard output
5	42
1	256
42 1	514
2	1284
0 1	61726
1 1	
1	
239 2	
2	
1 1	
2 1	
3	
1 1	
2 2	
3 2	