10489   Boxes of Chocolates

Little *Pippy* has got a lot of chocolates on her 6-th birthday. She is a very good and charming girl and always shares his belongings with her friends (and she has lots of friends). Now she wants to share all the chocolate with her friends. She will try her best to give all her friend equal number of chocolates but in case she fails, she will give her pet cat *Kittu* the residue number of chocolates. The chocolates she has got are in boxes wrapped with beautiful papers. Sometimes a box do not contain chocolates but have smaller boxes inside them. Even sometimes the smaller boxes do not contain any chocolates but have further smaller boxes inside them. Only the smallest boxes always contain some chocolates.

Input

Input will start with an integer T. Following lines will contain descriptions for T test cases. First line of each test case will contain two integers N and B indicating the number of friends *Pippy* has and the number of box of chocolates she has got respectively. Each of the next B lines will contain a description of a single box. These lines will start with an integer K followed by K integers identified as $a_1, a_2, a_3, \ldots, a_k$. Here a_i indicates the number of boxes the i-th box contains within it where $(0 < i < K)$. The last number of the line indicates the number of chocolates contained in each of the smallest box. All the numbers will be positive and T, B, K will be less than 101 and N, a_i will be less than 10001.

Output

For each test case, print an integer on a single line indicating the number of extra chocolates *Kittu* will get after dividing all of them equally among *Pippy*'s friends.

Sample Input

```
2
5 2
3 2 3 4
4 5 2 3 1
6 1
4 5 6 7 8
```

Sample Output

```
4
0
```