
Problem A. Noueman and his hungry friends

Input file: **standard input**
Output file: **standard output**
Time limit: 1 second
Memory limit: 256 megabytes

As a devout muslim, Noueman is very happy! He waited for this month the whole year... What is Ramadan you say? Ramadan is a holy month that happens in the 9th month of the Islamic calendar.

During Ramadan, you are not allowed to eat any food or drink any water. This is called fasting. (doesn't mean have to be Usain Bolt to fast though ... for real). It lasts 29 or 30 days. But, the dates of Ramadan change each year due to the Moon's position in the sky. So, knowing the starting position of the moon and neighbouring stars each month, you are NOT asked to give the moon's position at the end of Ramadan... Why? Well, because our favourite boy, Noueman, (his friends too) are too hungry for that :(.

Our favourite local restaurant has a Menu of 6 items, consisting of harira, baghrira, rghifa, dates (also known as Tmer), 1 egg and finally, 1 glass of atay.

Each person wants to eat all the items in the Menu; however, our waiter is a bit clumsy from fasting all day. While serving the people, he may have forgotten to give some menu items to our hungry boys.

Given what each person was served, you are asked to tell for each person how many items that person is missing in his plate and what are they;

Input

First line contains an integer T ($1 \leq T \leq 100$) indicating the number of test cases.

Each test case consists of:

A line containing an integer N ($1 \leq N \leq 100$) indicating the number of hungry people.

followed by N Lines, for each hungry person, you are given an integer K ($0 \leq K \leq 6$) indicating the number of items served followed by K items, the list of items served.

Output

For each test case, print 7 lines.

In the first line, print the total number of missing items.

In the next 6 lines, for each item, print how many are missing, and their name in the following order (harira, baghrira, rghifa, dates, egg, atay).

Example

standard input	standard output
3	16
5	2 harira
3 harira baghrira rghifa	2 baghrira
2 baghrira egg	3 rghifa
3 dates atay harira	3 dates
6 dates harira atay rghifa baghrira egg	3 egg
0	3 atay
1	0
6 baghrira rghifa harira dates atay egg	0 harira
2	0 baghrira
1 atay	0 rghifa
2 atay baghrira	0 dates
	0 egg
	0 atay
	9
	2 harira
	1 baghrira
	2 rghifa
	2 dates
	2 egg
	0 atay