Problem 3: Event Planning

(Easy)

(Adapted from UVa 11559)

As you didn’t show up to the yearly general meeting of the Nordic Club of Pin Collectors, you were unanimously elected to organize this year's excursion to Pin City. You are free to choose from a number of weekends this autumn, and have to find a suitable hotel to stay at, preferably as cheap as possible.

You have some constraints: The total cost of the trip must be within budget, of course. All participants must stay at the same hotel, to avoid last year's catastrophe, where some members got lost in the city, never to be seen again.

Input Format

The first line of input contains T, the number of testcases.

The first line of each test case consists of four integers: N, the number of participants; B, the budget; H, the number of hotels to consider; and W, the number of weeks you can choose between. Then follow two lines for each of the H hotels. The first gives p, the price for one person staying the weekend at the hotel. The second contains W integers, a, giving the number of available beds for each weekend at the hotel.

Constraints

- $1 \leq T \leq 100$
- $1 \leq N \leq 200$
- $1 \leq B \leq 5 \times 10^6$
- $1 \leq H \leq 18$
- $1 \leq W \leq 13$
- $1 \leq p \leq 10^4$
- $0 \leq a \leq 1000$

Output Format

For each test case, write to the output the minimum cost of the stay for your group, or `stay home` if nothing can be found within the budget, on a line by itself.

Sample Input

```
2
3 1000 2 3
200
0 2 2
300
27 3 20
```

```
5 2000 2 4
300
4 3 0 4
450
7 8 0 13
```

Sample Output

```
900
stay home
```