

3007 Shopping

The local supermarket has survived with one checkout for many years. Yet, recently the supermarket has become much busier. The manager is planning to add more checkouts but this will take some time.

As an interim measure the manager aims to minimize the total time the customers wait in the queue for the checkout. More precisely, this total waiting time is defined as the sum of all customer waiting times, where a customer is considered to be waiting when in the queue, but not considered to be waiting when being served at the checkout. The shop will stay open until all the customers have been served.

The manager has decided to experiment with a more flexible checkout service policy. Under this new policy:

- A waiting customer and even a newly arriving customer can be directed to the checkout regardless of her current position in the waiting queue.
- A customer can be returned to the queue part way through being served at the checkout. When that customer later returns to the checkout only the remaining time to complete her checkout procedure is required.
- No extra time is required to pick a customer from the queue or to put a customer back onto the queue.

Your task is to work out the minimum total waiting time as defined above.

Input

The first line contains the number of scenarios you will be given.

Each scenario begins with an integer n which is the number of customers where $1 \leq n \leq 400$. Then the next n lines contain the information for customers labelled 1 to n . Each of these lines contains two numbers i and j separated by a single space, where $0 \leq i \leq 36000$ and $1 \leq j \leq 600$, with the following meaning:

- i represents the time the customer arrives at the checkout with her load of shopping, this is given as the number of seconds from the time the shop opened.
- j represents the time required to scan and pay for her shopping.

Output

For each scenario output a line consisting of the number of customers and the minimum total waiting time in seconds, separated by a single space.

Sample Input

```
3
4
2000 500
200 300
1500 200
2300 400
```

```
4
100 100
100 100
100 200
100 200
3
100 500
100 100
200 100
```

Sample Output

```
4 200
4 700
3 200
```