

Helpful TAs

Filename: help

The Problem

Your TAs work hard to make sure that everyone who needs help gets it. However, they also want to feel like the work they do is worthwhile. One TA in particular has made a numeric system for calculating a numerical value of his time being spent on answering various types of questions. This TA might judge one person's question to be a very good question, very worth the time spent answering it, while another question might have been less worthwhile, such as if the student ends up figuring out the answer themselves. So, rather obviously, this TA would like to maximize the value of the time he spends answering questions. But of course, this TA does not have unlimited time to spend answering questions. So, he asks you for help (since he is too busy answering questions to write this program himself): he would like you to write a program that, given a list of questions' values and the time it takes to answer them, calculate the largest total worth he can get out of his day of answering questions. Total worth is the sum of the values of each question he answers that day.

The Input

The first line will contain a single integer, D , the number of days you need to solve this problem for. Following this will be D days to solve.

Each day will start with a line containing two integers: N ($0 \leq N \leq 2000$), the number of questions being asked that this TA can answer, and M ($1 \leq M \leq 1000$), the number of minutes this TA has to spend answering questions on this day. Following this will be N lines, each describing a question. Each question description will contain two integers, T_i ($1 \leq T_i \leq 1000$), the number of minutes it will take to answer this questions, and V_i ($0 \leq V_i \leq 1000000$), the value of answering this questions.

The Output

Output each day on a line, with the format "*Day #1:* ", where 1 is the day number, followed by the maximum total worth this TA can get out of the day.

Sample Input

```
3
2 10
2 4
3 3
3 15
5 10
10 5
5 8
4 10
5 5
8 6
6 8
5 5
```

Sample Output

```
Day #1: 7
Day #2: 18
Day #3: 10
```