Boredom
Problem ID: boredom

It is a rainy afternoon and Lea sits at home, mindlessly staring out of the window. She has nothing planned for the rest of the week, all her friends are on holiday, and according to the weather forecast, it is going to keep pouring down for days on end. Lea is bored out of her mind.

After a while, she decides she cannot stand the boredom any longer. She takes her hammer, walks over to the wall, and smashes the small case with the label: "In case of extreme boredom". Inside, she keeps a list of all the things she could do in these cases. One item on this list is, for example, "Read the collected works of Dr. A. B. Surd (20 f/m, 180 minutes)" [1]. For every item, she wrote down the amount of fun it provides (in funsies/minute) and maximum amount of time she can spend doing it (after she finished reading the books, they do not provide any more funsies).

Can you tell Lea how much fun she can have in the time she has left (in funsies)?

Input

The first line of the input contains an integer t. t test cases follow, each of them separated by a blank line. Each test case starts with a single line containing two integers n m, where n is the amount of items on Leas list and m is the number of free hours Lea has left until the weather clears up again and she finds something else to do. n lines follow, specifying the possible activities. Line i contains $name_i$ fun_i len_i, which means Lea can do the activity $name_i$ for a maximum of len_i minutes and will have fun_i funsies per minute while doing it.

Output

For each test case, print a line containing "Case #i: x" where i is its number, starting at 1 and x is the amount of fun Lea can have over the course of m hours. Each line of the output should end with a line break.

Constraints

- $1 \leq t \leq 20$
- $1 \leq n \leq 10000$
- $1 \leq m \leq 10000$
- $name_i$ consists of "a - z", "A - Z" and underscores for all $1 \leq i \leq n$
- All names are unique and at most 30 characters long.
- $0 \leq fun_i \leq 100$ for all $1 \leq i \leq n$
- $0 \leq len_i \leq 10000$ for all $1 \leq i \leq n$

[1] Dr. A. B. Surd is the most well-known author of contemporary literature in Absurdistan

Sample Input 1

```
4
4 5
Win_Starcraft_Tournament 10 120
Practice_Aerial_Shots 8 150
Stare_at_Goats 1 500
Plan_Zombie_Apocalypse 4 20

2 2
Kick_Ass 50 60
Chew_Bubblegum 100 30

6 100
Build_Rogue_AI 100 1000
Publish_Scientific_Paper 30 500
Get_famous 80 120
Witness_Singularity 50 10
Watch_AI_take_over_world 5 100
Survive_in_dystopian_future 1 10000

2 10
Nothing 1 10000
Make_list_of_all_known_words 5 10000
```

Sample Output 1

```
Case #1: 2490
Case #2: 6000
Case #3: 129870
Case #4: 3000
```

Sample Input 2

```
6
3 5
oMLtJtitW 3 49
KDlfkzVtqebsR_W 9 33
irAjVeg 4 34

2 4
wwgfUNsmxlQiUH 9 46
dbHwXh 4 31

2 4
oPLWq_RAPjwT 4 30
hdhfkfgnL_F 4 40

3 5
hmMIsPXQgv 4 50
iAdfXphFtFeT 1 34
xJXhBGM 3 36

3 3
ZpKWBCkrlRv 1 32
cF_EEyAylA 3 43
pdzgDZV 6 47

2 5
lgcEqux 9 37
mETDh 9 42
```

Sample Output 2

```
Case #1: 580
Case #2: 538
Case #3: 280
Case #4: 342
Case #5: 443
Case #6: 711
```