1200 – Thief

A thief has entered into a super shop at midnight. Poor thief came here because his wife has sent him to buy some necessary households. Instead of buying the items, he decided to steal them.

He has a bag with him which can carry up to **W** kg. In the list (given by his wife) there are four fields 1) item name, 2) the price of the item, 3) how many of this item is required and 4) the weight of this item. The items are solid items, so he can't take any item after dividing into pieces.

Now the thief wants to take items in his bag such that it fulfills his wife's list, and the total weight of the items is not greater than **W**. And he can't take any item other than the items mentioned in the list, otherwise his wife would found the item and he may get caught. But he can take more items than required. And he wants to sell these extra items and earn some money. Assume that he can take any item (is in the list) any number of times unless they overflow his bag.

Now you are given the necessary information of the items and his bag, you have to find the maximum profit the thief can make.

Input

Input starts with an integer **T (≤ 100)**, denoting the number of test cases.

Each case starts with a line containing two integers **n (1 ≤ n ≤ 100)** and **W (1 ≤ W ≤ 10000)**, where **n** denotes the number of items. Each of the next **n** lines contains three integers $\mathbf{p_i}$ $\mathbf{c_i}$ $\mathbf{w_i}$ **(1 ≤** $\mathbf{p_i}$**,** $\mathbf{c_i}$**,** $\mathbf{w_i}$ **≤ 100),** meaning that the price of the i^{th} item is $\mathbf{p_i}$, $\mathbf{c_i}$ of it must be taken, and the weight is $\mathbf{w_i}$.

Output

For each case, print the case number and the maximum profit he can get. If it's impossible to fulfill his wife's requirements, print **'Impossible'**.

Sample Input	Output for Sample Input
2 3 20 10 1 10 5 1 5 1 1 1 1 10 10 1 11	Case 1: 4 Case 2: Impossible