Troop Mobilization

You are playing a strategy games in which you are required to mobilize an army. The army consists of different types of troops, each of which has a cost, health, and potency. You can acquire any combination of the troop types, even fractional, such that the total cost is no more than the amount of money you have to spend. The strength of the army is equal to its *total* health value multiplied by its *total* potency (i.e. $(\Sigma a_i h_i) \times (\Sigma a_i p_i)$, where h_i is the health of troop type **i**, p_i is the potency of troop type **i**, and a_i is the amount acquired of troop type **i**). What is the greatest strength you can achieve given the troops available and the money in your coffers? You may assume that there will always be sufficient troops to buy as many as you can afford.

Input

Each input will consist of a single test case. Note that your program may be run multiple times on different inputs.

Each test case will begin with a line with two space-separated integers n ($1 \le n \le 30{,}000$) and m ($0 \le m \le 100{,}000$), where n is the number of troop types and m is the total amount of money you have to spend.

Each of the next n lines will hold three values separated by spaces, representing a type of troop:

c h p

Where c ($1 \le c \le 100{,}000$) is an integer, which is the cost of that type of troop, h ($0.0 \le h \le 1.0$) is a real number, which is the health of that type of troop, and p ($0.0 \le p \le 1.0$) is a real number, which is the potency of that type of troop.

Output

Output a single real number, which is the maximum strength you can achieve with your monetary resources. Output this number rounded to exactly 2 decimal places.

Sample Input	Sample Output
4 100000 300 1 0.02 500 0.2 1 250 0.3 0.1 1000 1 0.1	19436.05
2 100 1 0.1 1 1 1 0.1	3025.00