Enterprise

Time limit: 2.5 second
Memory limit: 64 MB

To bind a broom it’ s a hard work. As there is a very big demand for this high-tech product an brooms binding enterprise is to have a big amount of production workshops. You are to help such an enterprise to allocate the work among the workshops. Each workshop can bind from 0 to K brooms a day. Economists of the enterprise found out that each bound broom has a different prime cost: in most cases the more brooms were bound a day the less prime cost has the last broom bound that day. However, there may be more complicated situations. As a first approximation you may assume every dependence linear. So decided the economists when they determined a dependence of the next in turn broom’ s prime cost on the industrial output of the workshop. You are to find out the optimal work load of the workshops.

Input

The first line contains two integers N and M ($1 \le N, M \le 1000$) — an amount of workshops and the required industrial output of brooms, respectively.

Then workshops description follows. The (i+1)-st line describes the i-th workshops with three numbers K_i, P_i, and Q_i ($1 \le K_i \le 100$; $0 \le P_i, Q_i \le 1000$) — they are the maximal number of brooms that can be bound at the i-th workshop a day, the prime cost of the first broom and the prime cost of K_i-th broom at the i-th workshop. As it was mentioned above the cost of j-th broom’ s production is the linear with respect to j function.

Output

If the enterprise can’ t produce the required number of brooms your program is to output the maximal number of brooms V that can be bound at the enterprise.

Besides, you are to output the total costs on production of M (or V if the enterprise can’ t bind M) brooms with optimal allocation of industrial outputs within two digits after a decimal point.

The output format is to be as in sample outputs below.

Samples

input	output
2 10 6 20 15 100 100 100	Minimum possible cost: 505.00
2 10 5 30 14 1 20 20	Maximum possible amount: 6 Minimum possible cost: 130.00

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Problem Source: USU Championship 2004