8026 Studying For Exams

It is exam time! You have, of course, been spending too much time participating in various programming contests and have not done much studying. Now you have N subjects to study for, but only a limited amount of time before the final exams. You have to decide how much time to allocate to studying each subject, so that your average grade over all N subjects is maximized.

As a seasoned programming contest competitor, you recognize immediately that you can determine the optimal allocation with a computer program. Of course, you have decided to ignore the amount of time you spend solving this problem (i.e. procrastinating).

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You have a total of T hours that you can split among different subjects. For each subject i, the expected grade with t hours of studying is given by the function $f_i(t) = a_i t^2 + b_i t + c_i$, satisfying the following properties:

- $f_i(0) \geq 0$;

- $f_i(T) \leq 100$;

- $a_i < 0$;

- $f_i(t)$ is a non-decreasing function in the interval $[0, T]$.

You may allocate any fraction of an hour to a subject, not just whole hours. What is the maximum average grade you can obtain over all n subjects?

Input

The input file contains several test cases, each of them as described below.

The first line of each input contains the integers N ($1 \leq N \leq 10$) and T ($1 \leq T \leq 240$) separated by a space. This is followed by N lines, each containing the three parameters a_i, b_i, and c_i describing the function $f_i(t)$. The three parameters are separated by a space, and are given as real numbers with 4 decimal places. Their absolute values are no more than 100.

Output

For each test case, output in a single line the maximum average grade you can obtain. Answers within 0.01 of the correct answer will be accepted.

Sample Input

```
2 96
-0.0080 1.5417 25.0000
-0.0080 1.5417 25.0000
3 34
-0.0657 4.4706 23.0000
-0.0562 3.8235 34.0000
-0.0493 3.3529 42.0000
```

Sample Output

```
80.5696000000
70.0731488027
```