



北京大学

PEKING UNIVERSITY

JUDGE ONLINE FOR ACM/ICPC



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## Dropping tests

Language:

Time Limit: 1000MS

Memory Limit: 65536K

Total Submissions: 20475

Accepted: 6950

## Description

In a certain course, you take  $n$  tests. If you get  $a_i$  out of  $b_i$  questions correct on test  $i$ , your cumulative average is defined to be

$$100 \cdot \frac{\sum_{i=1}^n a_i}{\sum_{i=1}^n b_i}.$$

Given your test scores and a positive integer  $k$ , determine how high you can make your cumulative average if you are allowed to drop any  $k$  of your test scores.

Suppose you take 3 tests with scores of 5/5, 0/1, and 2/6. Without dropping any tests, your cumulative average is

$100 \cdot \frac{5+0+2}{5+1+6} = 50$ . However, if you drop the third test, your cumulative average becomes

$100 \cdot \frac{5+0}{5+1} \approx 83.33 \approx 83$ .

## Input

The input test file will contain multiple test cases, each containing exactly three lines. The first line contains two integers,  $1 \leq n \leq 1000$  and  $0 \leq k < n$ . The second line contains  $n$  integers indicating  $a_i$  for all  $i$ . The third line contains  $n$  positive integers indicating  $b_i$  for all  $i$ . It is guaranteed that  $0 \leq a_i \leq b_i \leq 1,000,000,000$ . The end-of-file is marked by a test case with  $n = k = 0$  and should not be processed.

## Output

For each test case, write a single line with the highest cumulative average possible after dropping  $k$  of the given test scores. The average should be rounded to the nearest integer.

## Sample Input

```
3 1
5 0 2
5 1 6
4 2
1 2 7 9
5 6 7 9
0 0
```

## Sample Output

83  
100

## Hint

To avoid ambiguities due to rounding errors, the judge tests have been constructed so that all answers are at least 0.001 away from a decision boundary (i.e., you can assume that the average is never 83.4997).

## Source

Stanford Local 2005

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