Mangoes



It's the time of the year when fresh mangoes are available. Bob has a very good day at his school today and decides to treat some of his friends with mangoes. There are N people in his friend circle, and he has M mangoes. Initial appetite level of the friends is represented by an array $a = \{a[1], a[2], ..., a[N]\}$, where a[1] represents appetite level of first friend, a[2] represents appetite level of second friend, and so on. Apart from this, each friend has a happiness factor which is represented by an array $h = \{h[1], h[2], ..., h[N]\}$. If i^{th} friend is invited to the party, and he finds that there are p other friends, then he will eat a[i] + p*h[i] mangoes.

Thus, if k friends, indexed $b = \{b_1, b_2...b_k\}$, are invited to party, then total number of mangoes consumed will be $(a[b_1]+(k-1)*h[b_1]) + (a[b_2]+(k-1)*h[b_2]) + ... + (a[b_k]+(k-1)*h[b_k])$.

For example, if there are N=5 friends whose initial appetite is represented by $a=\{2, 5, 3, 2, 4\}$ and happiness factor is represented by $h=\{30, 40, 10, 20, 30\}$. Suppose Bob invites k=3 friends, indexed $\{2, 4, 5\}$, then total number of mangoes eaten will be

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= (a[2]+(3-1)*h[2]) + (a[4]+(3-1)*h[4]) + (a[5]+(3-1)*h[5])
= (5+2*40) + (2+2*20) + (4+2*30)
= 85 + 42 + 64
= 191
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Bob is wondering what is the maximum number of friends he can invite to his treat, so that, their hunger can be completely satisfied.

Note: It is not necessary that all mangoes have to be consumed.

Input

The first line contains two space separated integers, N M, where N is the number of friends, and M is the number of mangoes Bob has. Then in next line follows N space separated integers, a[1], a[2],..., a[N], which represent the initial appetite of friends. In next line there are again N space separated integers, h[1], h[2],..., h[N], representing the happiness factor for friends.

Output

Print the maximum number of friends which Bob can invite to his treat.

Constraints

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1 \le N \le 5 * 10^4

1 \le M \le 2.5 * 10^{15}

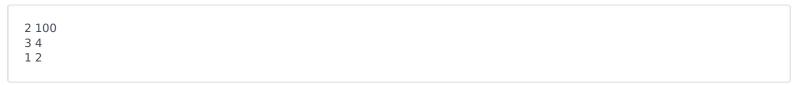
1 \le a[i], h[i] \le 10^6, where i \in [1, N]
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Sample Input #00

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5 200
2 5 3 2 4
30 40 10 20 30
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Sample Output #00

Sample Input #01



Sample Output #00

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Explanation

Test Case #00: This case is explaned in the statement.

Test Case #01: We can call both people. They will consume (3+1*1)+(4+1*2)=4+6=10 mangoes. Hence, only 10 mangoes are consumed.

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