

B. Vasya and Public Transport

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

Vasya often uses public transport. The transport in the city is of two types: trolleys and buses. The city has n buses and m trolleys, the buses are numbered by integers from 1 to n , the trolleys are numbered by integers from 1 to m .

Public transport is not free. There are 4 types of tickets:

1. A ticket for one ride on some bus or trolley. It costs c_1 burles;
2. A ticket for an unlimited number of rides on some bus or on some trolley. It costs c_2 burles;
3. A ticket for an unlimited number of rides on all buses or all trolleys. It costs c_3 burles;
4. A ticket for an unlimited number of rides on all buses and trolleys. It costs c_4 burles.

Vasya knows for sure the number of rides he is going to make and the transport he is going to use. He asked you for help to find the minimum sum of burles he will have to spend on the tickets.

Input

The first line contains four integers c_1, c_2, c_3, c_4 ($1 \leq c_1, c_2, c_3, c_4 \leq 1000$) — the costs of the tickets.

The second line contains two integers n and m ($1 \leq n, m \leq 1000$) — the number of buses and trolleys Vasya is going to use.

The third line contains n integers a_i ($0 \leq a_i \leq 1000$) — the number of times Vasya is going to use the bus number i .

The fourth line contains m integers b_i ($0 \leq b_i \leq 1000$) — the number of times Vasya is going to use the trolley number i .

Output

Print a single number — the minimum sum of burles Vasya will have to spend on the tickets.

Examples

input
1 3 7 19 2 3 2 5 4 4 4
output
12

input
4 3 2 1 1 3 798 1 2 3
output
1

input
100 100 8 100 3 5

7 94 12 100 1 47 0 42
output
16

Note

In the first sample the profitable strategy is to buy two tickets of the first type (for the first bus), one ticket of the second type (for the second bus) and one ticket of the third type (for all trolleys). It totals to $(2 \cdot 1) + 3 + 7 = 12$ burles.

In the second sample the profitable strategy is to buy one ticket of the fourth type.

In the third sample the profitable strategy is to buy two tickets of the third type: for all buses and for all trolleys.