

A. Sereja and Coat Rack

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

Sereja owns a restaurant for n people. The restaurant hall has a coat rack with n hooks. Each restaurant visitor can use a hook to hang his clothes on it. Using the i -th hook costs a_i rubles. Only one person can hang clothes on one hook.

Tonight Sereja expects m guests in the restaurant. Naturally, each guest wants to hang his clothes on an available hook with minimum price (if there are multiple such hooks, he chooses any of them). However if the moment a guest arrives the rack has no available hooks, Sereja must pay a d ruble fine to the guest.

Help Sereja find out the profit in rubles (possibly negative) that he will get tonight. You can assume that before the guests arrive, all hooks on the rack are available, all guests come at different time, nobody besides the m guests is visiting Sereja's restaurant tonight.

Input

The first line contains two integers n and d ($1 \leq n, d \leq 100$). The next line contains integers a_1, a_2, \dots, a_n ($1 \leq a_i \leq 100$). The third line contains integer m ($1 \leq m \leq 100$).

Output

In a single line print a single integer — the answer to the problem.

Examples

input
2 1 2 1 2
output
3

input
2 1 2 1 10
output
-5

Note

In the first test both hooks will be used, so Sereja gets $1 + 2 = 3$ rubles.

In the second test both hooks will be used but Sereja pays a fine 8 times, so the answer is $3 - 8 = -5$.