Captain Haddock's Adventure

After their successful exploration of moon, Tintin's friend, Captain Haddock has found a new concept to utilize his skills. He is supposed to be a sailor, but no longer wants to sail on the sea. Rather now a days he is interested about deep space. He has started sailing on the deep space for business reasons. His motivation is to establish business relation to other alien planets. So Captain Haddock now has become an intergalactic merchant. He has formed the largest intergalactic enterprize with his friends, Tintin and Calculus. Professor Calculus has invented a very fast spaceship which lets him to travel from one planet to any other planet very quickly. To do business with aliens, captain keeps traveling from one planet to another. When he arrives at a planet, he sells to the aliens everything he has and buys new things from them. He then travels to another planet using the spaceship and does the same business again. The planet, from where he starts his tour is already given. He cant use the spaceship more than T times in a single tour. So, after traveling T times, he must stop. However, not all the planets are congenial for his long time stay. So the last planet in the tour must be some friendly planet. In this problem you have to find an optimal tour for Captain Haddock so that his profit is maximized. Remember, it is permitted that, in a tour, he can go to same planet more than once.

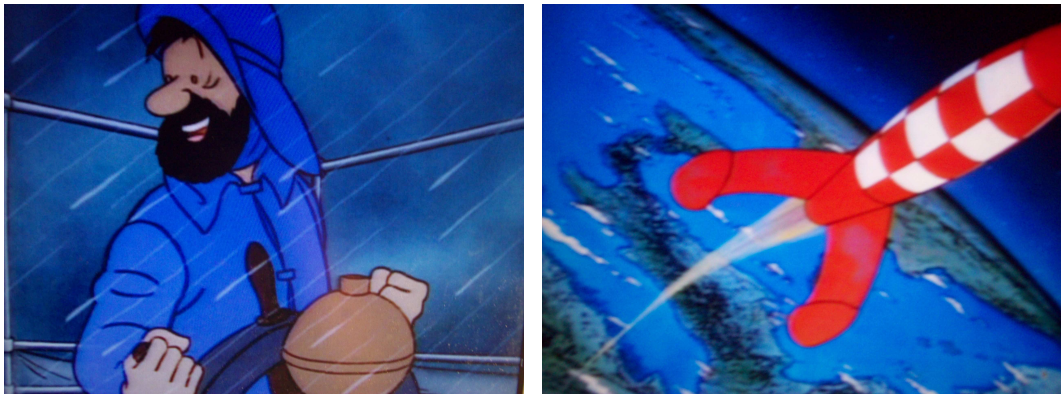

Figure 1: An example scenario

Input Specification

Input starts with four integers C, $2 \leq C \leq 100$, the number of planets, S, $1 \leq S \leq 100$, the identifier of the starting planet, E, $1 \leq E \leq 100$, the number of planets his tour can end at, and T $1 \leq T =\leq 1000$, the number of spaceship travels he can do. Then follow C lines, each with C non-negative integers. The j'th integer of the i'th line will describe the profit he earns when he goes from planet i to planet j. As he does not want to make a trip to a planet he is already in , the i'th integer of the i'th line will always be 0. Note that going from planet i to planet j can have a different profit than going from planet j to planet i. After there will be a line with E integers, the identifier of the friendly planets, where he can end.

Output Specification

For each input set produce one line of output, print the total profit he can earn in the corresponding tour.

Sample Input

```
3 1 2 2
0 3 5
5 0 1
9 2 0
2 3

10 2 4 6
0 9 4 5 9 1 0 3 2 1
1 0 1 1 1 2 3 4 0 0
1 0 0 1 2 6 7 4 5 3
1 2 3 0 1 2 3 1 2 3
3 6 0 0 0 2 3 4 0 0
1 1 1 1 1 0 1 2 2 2
2 1 2 1 2 1 0 2 1 2
9 0 1 0 4 0 2 0 2 5
5 4 9 3 2 9 6 8 0 2
3 4 5 6 7 2 1 2 3 0
4 5 7 8

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

Sample Output

```
7
44
26
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