Interrogation

Introduction

Now we'll talk a little differently... – whispered General Beattle with a twinkle in his eye, drawing the curtain in the window of his office. Not since today it is known that beetlejumpers can subtly pull not one but more information from prisoners. When the prisoner turns out to be a spy from the most powerful empire of CFK planet, each message becomes more precious than gold. Gentle smile broke on the face of the General – he decided to look into the matter personally. He prepared a special projection for the guest, and as soon as he started the player... he left the room. Before the eyes of the spy there appeared first seconds of special, extended, director's versions of all episodes of "The Bold and the Beettlebugged".

The interrogation went well – there was collected new, very valuable information. Unfortunately, despite exhaustive throwing soap in his eyes, the spy demonstrated the brightness of mind and tried to warn his superiors. Taking advantage of the guard's moment of inattention, he gained access to the radio. Hardly had he managed to broadcast his identification and checksum of the earlier prepared message, when he became overtaken. *You know what you can expect for it* – growled Beattle, eyeing the guards up and down. He was just about to select for them a tape with an equally interesting record, when suddenly he came up with an idea of how to gain from this situation.

Problem

You have the spy's testimony. Your task is so to prepare a message on the basis thereof in a way that compliantly with the guidelines from General Beattle will provide the best possible information to mislead the enemy. The language of the hostile empire is seemingly simple to analyze – words consist only of small letters from the English alphabet. The words then make sentences. The beetlejumpers already know that as a result of the checksum having already been sent, the number of appearance of each letter in the final communication was limited.

The experienced General Beattle can with surgical precision determine the preciousness of the prisoner's words. Also, he knows perfectly well how to mislead the enemy. Each registered Z sentence is characterized by two values: S_Z and M_Z. If in the message there appear k words from a given Z sentence, then the substantive and infiltrative value of the message increases by $k \cdot S_Z$. If in the message there appears a complete Z sentence, then to the value of the message there shall be added the value of M_Z sentence. In order not to arise suspicion from the enemy's engineers, the infiltrative value of certain of sentences is negative ($M_Z < 0$).

Input data

Test sets are given in inter*.in files.

The first line in the test set has 26 non-negative integers, not greater than 10^5, separated with whitespaces, denoting the maximum number of occurrences of $a, b, c, \ldots, y, z$ letters in the message. The second line contains one natural number L, denoting the number of sentences pronounced by the prisoner. The following L lines describe next sentences where i-th sentence consists of two S_i and M_i integers and a string consisting of non-empty string of letters, denoting consecutive words. S_i is a substantive value of each word in the sentence, whereas M_i is the value of a complete sentence. Each sentence consists of at least one word. In each sentence there are no more than 10^5 letters.

$$1 \leqslant L \leqslant 1000$$
$$0 \leqslant S_i \leqslant 10^5$$
$$-10^7 \leqslant M_i \leqslant 10^7$$

Output data

The first line should contain an integer number A, being the substantive value of the message. The second line should contain a single integer number W ($W \geqslant 0$), denoting the number of words constituting the message. Each of the following W lines must contain non-empty string of letters denoting the next word.

Example

For a given data set:

```
3 2 2 1 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
4
5 4 cad cad cad
3 -20 eba eba cad eba
1 30 eba cad
8 10 abaab
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A possible answer could be as follows:

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46
3
cad
eba
eba
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For the first sentence you obtain 5, for the second sentence 9, for the third 32, and for the fourth 0.

Score

If the answer for the given data set is correct, then the score for the set is $\max(A, 1)$; otherwise the score is 0.