Cards

Elly plays the following one-player card game. In the beginning she draws 5 cards from a standard 52-card deck, leaving some of the remaining ones (possibly all of them) in a pile near her. At each round she does:

1. Choose one of the cards in her hand and throw it away (it no longer plays any role in the game)
2. Pick the topmost card of the pile so she is again with 5 cards.
3. Finds which is the most common rank among the cards in her hand and counts how many occurrences it has. If there are k cards with this rank she wins R_k points.
4. Finds which is the most common suit among the cards in her hand and counts how many occurrences it has. If there are k cards with this suit she wins S_k points.

The game continues until there are no more cards in the pile. The goal is to win as more points as possible.

Elly is cheating by going through the cards in the pile before she starts the game. Using her phenomenal memory, she remembers them all and in which order they will be drawn. Having this information find the maximal points she can get if she plays optimally.

Input
On the first line of the standard input will be given the integer N – the number of cards in the pile. On the second line will be given four integers R_1, R_2, R_3, and R_4 – how many points she will win at each step if the most common rank among the cards in her hand has 1, 2, 3 or 4 occurrences, respectively. On the third line will be given five integers S_1, S_2, S_3, S_4, and S_5 – how many points she will win at each step if the most common suit among the cards in her hand has 1, 2, 3, 4, or 5 occurrences, respectively. The following line contains the 5 cards she starts with. The last line contains the N cards in the pile, in the order she draws them.

Each of the cards is described as a 2-character string. The first character is the rank of the card ('2', '3', '4', '5', '6', '7', '8', '9', 'T', 'J', 'Q', 'K', or 'A'). The second character is the suit of the card ('S' for spades, 'D' for diamonds, 'H' for hearts, and 'C' for clubs). It is guaranteed, that all cards in the input are different.

Output
On a single line of the standard input print one integer – the maximal points Elly can get if she plays optimally.

Constraints
❖ $1 \le N \le 47$
❖ $1 \le R_i, S_i \le 1000$

Sample Input	Sample Output
10 2 4 9 7 3 5 8 9 11 TC TH 6D 5D JD TD 7H 2C 3H KS JS 8D AD 7D 9C	152

If Elly throws away the 10 of clubs or the 10 of hearts, she will gain 13 points in this round: 4 points for rank (she will have two tens) and 9 points for suit (she will have 4 diamonds). If she discards one of the diamonds, instead, she will gain 17 points: 9 points for rank (three tens) and 8 points for suit (3 diamonds).