Who dares to be a millionaire Problem Code: WDTBAM

Chef is going to participate in a new quiz show: "Who dares to be a millionaire?"

According to the rules of the game, contestants must answer N questions. The quiz being famous for its difficulty, each question has **26** candidate answers, but only one of which is correct. Answers are denoted by capital Latin letters from A to Z. Chef knows all the questions that can be asked, and for each of them he knows the answer candidate he will choose (some of them can be incorrect). For each question, we'll tell you Chef's answer to it.

The game goes on as follows. First, all the questions are shuffled randomly. Then, a contestant is asked these questions one-by-one in the new shuffled order. If the contestant answers any question incorrectly, the game is over. Total winnings of the contestant are calculated as follows. Let X denote the number of questions answered correctly by the contestant. Depending on this value, the winnings are determined: W_0 dollars is the amount won for $X = 0$, W_1 dollars is for $X = 1$, and so on till $X = N$. Note that the game was invented by a twisted mind, and so a case where $W_i \geq W_{i + 1}$ for some $0 \leq i \leq N - 1$ is possible.

Chef is interested in finding the maximum possible winnings that he can amass.

Input
The first line of input contains an integer T denoting the number of test cases. The description of T test cases follows.

The first line of each test case contains a single integer N denoting the number of questions.

Next line contains N capital Latin letters denoting the correct answers to these questions.

Next line contains N capital Latin letters denoting answers given by Chef to these questions.

Next line contains $N + 1$ space-separated integers W_0, W_1, ..., W_N denoting the winnings for 0, 1, ..., N correct answers.

Output
For each test case, output a single line containing the value of maximum possible winnings that Chef can get.

Constraints
- $1 \leq T \leq 500$
- $1 \leq N \leq 1000$
- $0 \leq W_i \leq 10^9$

Subtasks
Subtask 1: (20 points)

- 1 ≤ N ≤ 8

Subtask 2: (80 points)

- Original constraints

Example

Input:

```
3

5

ABCDE

EBCDA

0 10 20 30 40 50

4

CHEF

QUIZ

4 3 2 1 0

8

ABBABAAB

ABABABAB

100 100 100 100 100 100 100 100 100
```

Output:

```
30

4

100
```

Explanation

Example case 1. If questions will be placed in order: **2nd** (Chef's answer is B, which is correct), **3rd** (Chef's answer is C, and it is correct as well), **4th** (Chef's answer is D, and he is right), **5th** (Chef's answer is A but correct answer is E and the game is over), **1st**, Chef will correctly answer **3** questions, and therefore win **30** dollars.

Example case 2. Chef's answers for all questions are incorrect, so his winnings are W_0 dollars.

Example case 3. Since all W_i are equal to **100** dollars, Chef will win this sum in any possible case.