(D)Chat

Description

After four hours, Mr. Le finally met Ms. Y. When they went chatting on the street, they found that the words, the sentence pattern they used become "synchronized". They used lots of common words when they were chatting, e.g. "la", "wuwu". They were then curious about how many same words they used in their WeChat record. As some short pattern (words) may occur too many times, you are only asked to compute the number of common patterns with the length no shorter than *k*. The common pattern is defined as the contiguous sequence of characters occurring in two strings.

Input

The first line is the number *T* – the number of test cases. Then T test cases follow, each of which contains three lines:

A

B

k

A: the message of Mr. Le, B: the message of Ms. Y, k: the length constraint. $1 \le |A|, |B| \le 10^5$, $k \le \min(|A|, |B|)$. Where |A| is the length of string A.

Output

For each test case, print the number of common patterns with the length no shorter than *k*.

Example

Input	Output
2 ababa babab 2 LeY YLe 1	14 4