**Alien Genetics**

Xyblorg is reading through a fellow alien’s genetic sequence in order to find a cure for a disease. The thing is, Xyblorg struggles in finding where he is if he gets distracted. However, if he reads a bit before, he can uniquely determine where he left off.

The genetic sequence of the Xyblorgians doesn’t have just GATC. It has the letter **A-Z**! Each character in the string represents a nitrogenous base of their DNA of length **N**. Xyblorg wants to know what is the smallest value of **K** such that if he looks at any sequence of **K** consecutive letters, he can uniquely determine where he left off on reading it.

For example, suppose the genetic sequence is ‘ABCDABC’. Xyblorg cannot set K = 3, since if he sees ‘ABC’, there are two possible locations along the sequence where the consecutive set of letters might be. The smallest value of K that works is K = 4, since if he looks at any consecutive set of 4 letters, this sequence of letters uniquely determine his position on the genetic sequence.

**Input:** The first line of input contains **T**, the number of test cases. The next two lines indicate **N**, the length of the next line which contains **S**, the genetic sequence.

**Output:** The output will be the **K** for each test case.

**Example Input:**

2

7

ABCDABC

10

IXMVDKIXMV

**Example Output:**

4

5