*Typosquatting* is a hack that relies on mistakes made by Internet users when inputting a website address into a web browser. So if a user is trying to go to **godaddy.com** but they accidentally type in **goddady.com** and someone else owns that domain, they could pretend to be GoDaddy and steal valuable user information.

Assume that GoDaddy is introducing a new feature that helps users protect their domains from typosquatting. It is known that a typosquatter's URL is usually similar to the victim's domain, but has some *typos* in it, where a *typo* means that letters in two adjacent positions have been swapped.

Given **n**, the number of additional domains the owner is willing to buy to protect their domain against typosquatting, GoDaddy calculates the maximum number **k** such that all of the domains with **k** or fewer *typos* can be bought (excluding the original domain itself).

Your task is to implement an algorithm that finds **k** given **n** and a domain name.

Example

* For **n = 7** and **domain = "godaddy.com"**, the output should be  
  **solution(n, domain) = 1**.

For **k = 1** the following *typos* can be made:

**"ogdaddy.com"**

**"gdoaddy.com"**

**"goadddy.com"**

**"goddady.com"**

**"godadyd.com"**

**"godaddy.ocm"**

**"godaddy.cmo"**

**7** domains to buy altogether. That's exactly the number of domains the user can afford, so the answer is **1**.

* For **n = 9** and **domain = "omg.tv"**, the output should be  
  **solution(n, domain) = 2**.

For **k = 1**, the following *typos* can be made:

**"mog.tv"**

**"ogm.tv"**

**"omg.vt"**

For **k = 2**, **4** more *typos* can be obtained:

**"mgo.tv" (from "mog.tv")**

**"mog.vt" (from "mog.tv" or "omg.vt")**

**"gom.tv" (from "ogm.tv")**

**"ogm.vt" (from "ogm.tv" or "omg.vt")**

For **k = 3**, there're **3** more *typos* to consider:

**"gmo.tv" (from "mgo.tv" of "gom.tv")**

**"mgo.vt" (from "mgo.tv" or "mog.vt")**

**"gom.vt" (from "gom.tv" or "ogm.vt")**

Since **n = 9**, it's not enough to buy all domains with **3** or fewer *typos*, but it's enough to buy with **2** or fewer, so the answer is **2**.

*Note that equal domain strings that may be obtained differently are considered the same.*