Problem 1. The Isle of Man TT Race

This year's Isle of Man TT Race is going to be around Douglas and your job is to find the exact coordinates for it and the names of the racers. Every racer starts from a different place. You're going to receive the coordinates in the form of a geohash code.

Write a program that decrypts messages. You're going to receive a few notes that contain the following information:

- **Name of racer**
  - Consists only of letters. It is surrounded from the both sides by any of the following symbols – **"#, $, %, *, &". Both symbols** – in the **beginning** and at the **end** of the name should **match**.
- **Length of geohashcode**
  - Begins after the **"="** sign and it is consisted only of numbers.
- **Encrypted geohash code**
  - Begins after these symbols - **"!!"**. It may contain anything and the message always ends with it.

Examples for valid input:

`#SteveHislop#=16!!tv5dekdz8x11ddkc`

Examples of invalid input:

`%GiacomoAgostini$=7!!tv58ycb` – The length is the same, but the name is not surrounded by **matching signs**.

`$GeoffDuke$=6!!tuvz26n35dhe4w4` – The length doesn't **match** the **lengh** of the code.

`&JoeyDunlop&!!tvndjef67t=14` – The length should be **before** the code.

The information must be in the **given order**, otherwise it is considered **invalid**. The **geohash code** you are looking for is with length **exactly as much as the given length in the message**. To **decrypt** the code you need to **increase** the value of **each symbol** from the geohashcode with the **given length**. If you find a **match**, you have to **print** the following message:

`"Coordinates found! {nameOfRacer} -> {geohashcode}"`

and stop the program. Otherwise, after every **invalid** message print:

`"Nothing found!"`

Input / Constraints

- You will be receiving strings.
- There will always be a valid message.

Output

- If you find the right coordinates, print: `"Coordinates found! {nameOfRacer} -> {geohashcode}"`.
- Otherwise, print: `"Nothing found!"`.

Examples

Input	Output
%GiacomoAgostini%=7!!hbqw	Nothing found!
&GeoffDuke*=6!!vjh]zi	Nothing found!
JoeyDunlop=10!!lkd,rwazdr	Nothing found!
Mike??Hailwood=5!![pliu	Nothing found!
#SteveHislop#=16!!df%TU[Tj(h!!TT[S	Coordinates found! SteveHislop -> tv5dekdz8x11ddkc
Comments	
The first line matches, but the **length** of the code **doesn't match** the given number, so we print "Nothing found!" The second line begins with **"&"**, but ends with **"*"**, so we print "Nothing found!" The third line is not valid because the **name is not surrounded** with one of the **allowed symbols**. The forth line is not a match, because the name doesn't contain **only** letters. The fifth line is a match and the length is equal to the given number - 16, so we increase each of the symbols from the code with 16 and print the message in the appropriate format.	
Ian6Hutchinson=7!!\(58ycb4	Nothing found!
#MikeHailwood#!!'gfzxgu6768=11	Nothing found!
slop%16!!plkdek/.8x11ddkc	Nothing found!
$Steve$=9Hhffjh	Coordinates found! DaveMolyneux -> tuvz26n35dhe4w4
DavMolyneux=15!!efgk#'_$&UYV%h%	
RichardQ^uayle=16!!fr5de5kd