# Problem 2 – Ascent

You have been tasked to decrypt several messages. You will be given the messages as several input lines. You must read and decrypt messages until you receive the command “**Ascend**”.

When you receive a given message you must **decrypt** it and **print** it **immediately**. The messages have several encoded strings in them, which you must find. The encoded string consist of – a **single comma** (**,**) or an **underscore** (**\_**), a **sequence of English Alphabet letters**, and a **digit** at the end of it. **Examples:** “**,asd9**”, “**\_z8**”, “**,xzc9**“.

The decoding of a message is done by **adding** or **subtracting** the **digit** in it, from the **ASCII** **code** of **every character** in the **sequence of letters**. If the front character is a comma (**,**) you **add** the **digit** to the **ASCII codes** of the characters, if it’s an **underscore** (**\_**), you **subtract** it.

When you find an **encoded string**, you must “**memorize**” it. In other words, you find the encoded string “**\_mwt4**”,   
and decode it – it results in “**isp**”. If you find the same encoded string (**\_mwt4**), **again**, in a message **afterwards**, you must **replace** it with the **decoded value** corresponding to it (**isp**), **BEFORE** beginning to decode the message itself.   
**Example:** “**abcdefg,\_mwt42hijklmn**” = “**abcdefgkurhijklm**”.

You know that “\_mwt4” is “**isp**”, so the message would turn into “**abcedfg,isp2hijklmn**” which after decoding turns into “**abcdefgkurhijklm**”.

### Input

* The input comes in the form of input lines containing the encoded messages.
* When you receive the command “**Ascend**” the input sequence ends.

### Output

* You must print every message, **immediately** after you’ve decoded it.

### Constrains

* The input lines may consist of any **ASCII character**.

### Examples

|  |  |  |
| --- | --- | --- |
| **Input** | **Output** | **Comments** |
| ,plcqrkf3 \_twn2z <3  Ascend | softuni rulz <3 | Bla… |
| This \_vet4 is a ,I2\_iller0  Ya ,eswx2 listenin \_zu6 \_Vjl9 ,,I22iller  Ascend | This rap is a Killer  Ya guyz listenin to Mac Miller | Bla… |