Message Decrypter

Create a program, that **checks** if **inputs** have a **valid message** and **decrypt** it. On the **first** line you will **receive** a **number** that **indicates** how **many inputs** you will **receive** on the **next** lines**.**

A message is **valid** when:

- There is **nothing** else **before** and **after it**
- It **starts** with a **tag**, which is **surrounded** by either '**$**' or '**%**' (but **not both** at the same time), the tag itself has to be **minimum 3** characters long, **start** with a **uppercase** letter, **followed only** by **lowercase** letters
- There is a **colon** and a single **white space** after the tag
- There are **3 groups** consisting of **numbers** between '**[**' and '**]**', followed by a **pipe** ('**|**')

Example for a valid message:

```
"$Request$: [73]|[115]|[32]|"
```

You must **check** if the **message** is **valid** and if it **is**- **decrypt** it, if it **isn't** - **print** the following **message**:

```
"Valid message not found!"
```

Decrypting a **message** means to **take all numbers** and **turn** them **into ASCII symbols**. After successful decrypt, print it in the following format:

```
{tag}: {decryptedMessage}
```

Input

- On the **first** line - **n** - the count of inputs.
- On the **next n** lines - **input** that you have to **check** if it has a **valid message**.

Output

- Print all **results from each input**, **each on a new line**.

Examples

Input	Output	Comment
4 $Request$: [73]||[115]||[105]| %Taggy$: [73]||[73]||[73]| %Taggy%: [118]||[97]||[108]| $Request$: [73]||[115]||[105]||[32]||[75]|	Request: Isi Valid message not found! Taggy: val Valid message not found!	We have **3 input** lines to **check**. The **first** one **follows** the **rules** and **is valid**. The **second** one **doesn't** because the tag is **surrounded** by **both** '**%**' and '**$**'. The **third** one has a **valid message** and **is** in the **beginning** of the **input**. The **last** one is **invalid** because it has **more than 3 groups of numbers**.
3 This shouldnt be valid%Taggy%: [118]||[97]||[108]| $tAGged$: [97][97][97]| $Request$: [73]||[115]||[105]|true	Valid message not found! Valid message not found! Valid message not found!	