Problem 4. Message Translator

Create a program, that **checks** if its **inputs** have a **valid command and a valid message** and then **encrypts** it.

You will receive the number - **n** - of messages. You much check if each message is valid.

A message is **valid** when:

- The command is **surrounded by '!'**, **starts** with a **uppercase** letter, and then is **followed** by **only lowercase** letters.
- The command needs to be a **minimum** of **3 characters long**
- There is a **colon** after the command.
- There is message **consisting of alphabetical letters** between '[' and ']'.
- It needs to be a **minimum** of **8** characters long.

Example for a valid message:

`"!Send!:[IvanisHere]"`

You need to **check** if the **message** is **valid**.

- If it is valid - **encrypt** it.
- If it isn't valid- **print** the following **message**:

`"The message is invalid"`

Encrypting a **message** means to **take all letters** from the message and **turn** them **into ASCII numbers**. After successful encrypt, print it in the following format:

`{command}: {number1} {number2} {number3} (…)`

Note: Encrypt only the text in the message. If you have "[Ivan is Here]", the part that you need to encrypt is "Ivan is Here".

Input

- You receive a line - **input** that you have to **check** if it has a **valid message**.

Output

- Print the **result** in **format** described above.

Examples

Input	Output
2, [`!Send!:[IvanisHere]`, `*Time@:[Itis5amAlready]`]	Send: 73 118 97 110 105 115 72 101 114 101 The message is invalid
3, [`go:[outside]`, `!drive!:YourCarToACarWash`, `!Watch!:[LordofTheRings]`]	The message is invalid The message is invalid Watch: 76 111 114 100 111 102 84 104 101 82 105 110 103 115