# Problem 3 – Snowflake

Tony and Andi have been researching the snowflake structure for quite some time now. They managed to write a program which extracts a text pattern from the snowflake, but it oftenly produces invalid data. They begged you to help them, so you must write a program which validates the text pattern.

The **snowflake** has **3 elements**:

* **Surface** – should **NOT** contain **letters** and **digits**.
* **Mantle** – should **ONLY** contain **digits** and **underscores** (“\_”).
* **Core** – should **ONLY** contain **letters**.

You will receive several input lines, which will represent the **snowflake**. A **valid** snowflake is in the following format:

{surface}  
{mantle}  
{surface}{mantle}{core}{mantle}{surface}  
{mantle}  
{surface}

You must check if **all elements** are **valid**, by the **rules specified above**. If even one element is invalid, you should print “**Invalid**”.

If all are valid you should print “**Valid**” and the **length** of the core part on the **next line**.

## Input

* The input will consist of exactly **5 input lines**, in the format **specified above**.

## Output

* If **all the elements** of the **snowflake** are **valid**, you must print “**Valid**”, and the **length** of the **core**.
* If **even one** of the **elements** is **invalid**, you must print “**Invalid**”.

## Constraints

* The elements of the input may contain **ANY ASCII character**.
* The **input** will **always consist** of **5 input lines**.
* The input **may not always** be in the **valid snowflake** **format**.
* Allowed working **time** / **memory**: **100ms** / **16MB**.

## Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| \*-\*  1\_1\_1  \*\*\*444asd444\*\*\*  1\_1\_1  \*-\* | Valid  3 |
| !!!!!!  14741  -2Asdasdasdasd555!  \_\_\_  -- | Valid  12 |
| Asd  Asd  Asd  Asd  asd | Invalid |