**Pattern Syntax Checker**

<https://www.hackerrank.com/challenges/pattern-syntax-checker/problem>

Using **Regex**, we can easily match or search for patterns in a text. Before searching for a pattern, we have to specify one using some well-defined syntax.

In this problem, you are given a pattern. You have to check whether the syntax of the given pattern is valid.

**Note**: In this problem, a regex is only valid if you can compile it using the [Pattern.compile](http://docs.oracle.com/javase/6/docs/api/java/util/regex/Pattern.html" \l "compile%28java.lang.String%29) method.

**Input Format**

The first line of input contains an integer *N*, denoting the number of test cases. The next *N* lines contain a string of any printable characters representing the pattern of a regex.

**Output Format**

For each test case, print Valid if the syntax of the given pattern is correct. Otherwise, print Invalid. Do not print the quotes.

**Sample Input**

3

([A-Z])(.+)

[AZ[a-z](a-z)

batcatpat(nat

**Sample Output**

Valid

Invalid

Invalid