Detecting Valid Latitude and Longitude Pairs

Given a line of text which possibly contains the latitude and longitude of a point, can you use regular expressions to identify the latitude and longitude referred to (if any)?

Input Format

The first line contains an integer N, which is the number of tests to follow.
This is followed by N lines of text. Each line contains a pair of co-ordinates which possibly indicate the latitude and longitude of a place.

Constraints

1 <= N <= 100
The latitude and longitude, if present will always appear in the form of (X, Y) where X and Y are decimal numbers.
For a valid (latitude, longitude) pair:
-90<=X<=+90 and -180<=Y<=180.
They will not contain any symbols for degrees or radians or N/S/E/W. There may or may not be a +/- sign preceding X or Y.
There will be a space between Y and the comma before it.
There will be no space between X and the preceding left-bracket, or between Y and the following right-bracket.
There will be no unnecessary zeros (0) before X or Y.

Output Format

"Valid" where X and Y are the latitude and longitude which you found to be a valid (latitude,longitude) pair.
If the given pair of numbers are not a valid (latitude,longitude) pair, output "Invalid".

Sample Input

```
12
(75, 180)
(+90.0, -147.45)
(77.11112223331, 149.99999999)
(+90, +180)
(90, 180)
(-90.00000, -180.0000)
(75, 280)
(+190.0, -147.45)
(77.11112223331, 249.99999999)
(+90, +180.2)
(90., 180.)
(-090.00000, -180.0000)
```

Sample Output

```
Valid
Valid
Valid
Valid
Valid
Valid
Invalid
Invalid
Invalid
```

Invalid
Invalid
Invalid

Explanation

The first six pairs are valid because X, Y satisfy the criteria related to formatting issues, and they satisfy the conditions restricting the numerical range(s) of X and Y. The next six pairs are all invalid because: The first four (among this invalid group) do not satisfy the conditions restricting the numerical range(s) of X and Y. (90., 180.) is invalid because of an extra dot (.) after 90 and 180.

(-090.0000, -180.0000) is invalid because of the redundant zero (0) before 90.