Validating Credit Card Numbers ⭐

Problem   Submissions   Leaderboard   Editorial 🔒

You and Fredrick are good friends. Yesterday, Fredrick received N credit cards from **ABCD Bank**. He wants to verify whether his credit card numbers are valid or not. You happen to be great at regex so he is asking for your help!

A valid credit card from **ABCD Bank** has the following characteristics:

► It must start with a **4**, **5** or **6**.

► It must contain exactly **16** digits.

► It must only consist of digits (**0**-**9**).

► It may have digits in groups of **4**, separated by one hyphen **"-"**.

► It must NOT use any other separator like ' ' , '_', etc.

► It must NOT have **4** or more consecutive repeated digits.

Examples:

Valid Credit Card Numbers

```
4253625879615786
4424424424442444
5122-2368-7954-3214
```

Invalid Credit Card Numbers

```
42536258796157867      #17 digits in card number → Invalid
4424444424442444       #Consecutive digits are repeating 4 or more times → Invalid
5122-2368-7954 - 3214  #Separators other than '-' are used → Invalid
44244x4424442444       #Contains non digit characters → Invalid
0525362587961578       #Doesn't start with 4, 5 or 6 → Invalid
```

Input Format

The first line of input contains an integer N.

The next N lines contain credit card numbers.

Constraints

$0 < N < 100$

Output Format

Print 'Valid' if the credit card number is valid. Otherwise, print 'Invalid'. Do not print the quotes.

Sample Input

```
6
4123456789123456
5123-4567-8912-3456
61234-567-8912-3456
4123356789123456
5133-3367-8912-3456
5123 - 3567 - 8912 - 3456
```

Sample Output

```
Valid
Valid
```

```
Invalid
Valid
Invalid
Invalid
```

Explanation

4123456789123456 : **Valid**

5123-4567-8912-3456 : **Valid**

61234-**567**-8912-3456 : **Invalid**, because the card number is not divided into equal groups of **4**.

4123356789123456 : **Valid**

51**33-33**67-8912-3456 : **Invalid**, consecutive digits **3333** is repeating **4** times.

5123 — 4567 — 8912 — 3456 : **Invalid**, because space ' ' and – are used as separators.

Change Theme   Language   Python 3

```python
 1    # Enter your code here. Read input from STDIN. Print output to STDOUT
 2    import re
 3
 4    def is_valid_credit_card(number):
 5        # Rule 1: Must start with 4, 5, or 6
 6        if not re.match(r'^[456]', number):
 7            return False
 8
 9        # Rule 2: Must contain exactly 16 digits (with optional hyphens)
10        clean_number = number.replace('-', '')
11        if len(clean_number) != 16 or not clean_number.isdigit():
12            return False
13
14        # Rule 3: Hyphens must be properly placed if present
15        if '-' in number:
16            if not re.match(r'^\d{4}(-\d{4}){3}$', number):
17                return False
18
19        # Rule 4: No more than 3 consecutive repeated digits
20        if re.search(r'(\d)\1{3,}', clean_number):
21            return False
22
23        return True
24
25    n = int(input())
26    for _ in range(n):
27        card = input().strip()
28        print("Valid" if is_valid_credit_card(card) else "Invalid")
29
```

EMACS   Line: 29 Col: 1

⬆ Upload Code as File   ☐ Test against custom input   Run Code   Submit Code

Running Testcases

⊘ Test case 0 🔒   ⊘ Test case 4 🔒

⊘ Test case 1 🔒   ⊘ Test case 5 🔒

⊘ Test case 2 🔒

⊘ Test case 3 🔒

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