

Palindromic Factors

Problem

You are given a positive integer A . Find the number of factors of A which are palindromes. A number is called a [palindrome](#) if it remains the same when the digits in decimal representation are reversed. For instance, 121 is a palindrome, while 123 is not.

Input

The first line of the input gives the number of test cases, T . T lines follow.

Each line represents a test case and contains a single integer A .

Output

For each test case, output one line containing `Case #x: y`, where x is the test case number (starting from 1) and y is the number of factors of A which are palindromes.

Limits

Time limit: 2 seconds.

Memory limit: 1 GB.

$1 \leq T \leq 100$.

Test Set 1

$1 \leq A \leq 10^3$.

Test Set 2

$1 \leq A \leq 10^{10}$.

Sample

Sample Input

```
4
6
10
144
242
```

Sample Output

```
Case #1: 4
Case #2: 3
Case #3: 7
Case #4: 6
```

In the first test case, A has 4 factors which are palindromes: 1, 2, 3, and 6.

In the second test case, A has 3 factors which are palindromes: 1, 2, and 5.

In the third test case, A has 7 factors which are palindromes: 1, 2, 3, 4, 6, 8, and 9.

In the fourth test case, A has 6 factors which are palindromes: 1, 2, 11, 22, 121, and 242.