

# Round B 2022 - Kick Start 2022

## Palindromic Factors

### PROBLEM

### ANALYSIS

#### 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

Sample Output



Case #1: 4  
Case #2: 3

10  
144  
242

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.