

4008 Last Digit

The number of permutation without repetition that has a string S is so big, but in this problem you just need to print the last nonzero digit of it.

Input

In each test case you have a string S ($1 \leq |S| \leq 1000000$), all characters in the string are lowercase.

Output

For each test case print the last nonzero digit.

Note: For example for the first test case the permutation are:

```
aaab
aaba
abaa
baaa
```

Sample Input

```
aaba
aaabababababa
abbzazzazzalzalzzaaaaazlzalzaazlzlzla
w
```

Sample Output

```
4
7
8
1
```