Potion Shop

In the magical kingdom of Frindor, the famous wizard Wilfred runs a potion shop. To keep his prices low, he employs young apprentices to handle the cash registers. However, these apprentices often make mistakes while giving change to the customers. Wilfred realizes that these errors cost him more than he earns, as the apprentices end up giving more change than required.

Wilfred has tasked you to develop an algorithm that calculates the minimum number of coins required to give the customer their change, in the denominations of quarters ($0.25), dimes ($0.10), nickels ($0.05), and pennies ($0.01). If the amount due back is $5.00 or less, he wants to give the customer their change in coins only. For example, if the customer is due $1.23, you should output that they receive 4 quarters, 2 dimes, 0 nickels, and 3 pennies as their change.

Input

The first line of the input specifies the number of datasets, represented by an integer N. Following this line, each dataset consists of a single line containing an integer C ($1 \leq C \leq 500$), which represents the amount of change due to a customer in cents.

Output

For every dataset provided, the program should output the dataset number, followed by a space, and the breakdown of the amount of change in quarters, dimes, nickels, and pennies. The output should be in the following format:

`Q QUARTER(S), D DIME(S), N NICKEL(S), P PENNY(S)`

Sample Input

```
3
123
39
212
```

Sample Output

```
1 4 QUARTER(S), 2 DIME(S), 0 NICKEL(S), 3 PENNY(S)
2 1 QUARTER(S), 1 DIME(S), 0 NICKEL(S), 4 PENNY(S)
3 8 QUARTER(S), 1 DIME(S), 0 NICKEL(S), 2 PENNY(S)
```