

# Problem D

## Gallup

source: `gallup.*`

Often, we see results of gallups, like this:

```
Prefer red:      3.5%
Prefer green:    4.5%
Prefer yellow:  22.0%
Prefer blue:     70.0%
```

and you begin to wonder: how many people did they really ask? If the numbers are simple, like 20%, 40%, and 40%, you know that they asked 5 people (or 10, or 15, or more, but we are interested in the *minimum* number of people).

Your task is to write a program that reads sets of percentages and calculates the smallest number of people that could produce the given percentages. We know that this number is always less than 10 000.

### Input specifications

The input is a set of percentages. Each set is on a line of its own. Every line starts with an integer  $n$  ( $0 \leq n \leq 20$ ) giving the number of percentages in the set. If  $n > 0$ , the percentages follow as  $n$  numbers; these numbers may have 0–5 decimals, and all percentages in a set have the same number of decimals. (If there are no decimals, there is no decimal point.) The percentages always add up to about 100% as there may be small rounding errors. Numbers are rounded when digits are removed; they are rounded upwards if the first removed digit is 5 or more. Thus, 4.472 is rounded to 4.47, 4.5, or 4, depending on how many digits you want.

### Output specifications

For each set of data, print a line starting with “Case  $i$  :”, where “ $i$ ” is the data set’s number. Then follows a space and an integer giving the computed number of people. If no legal answer in the range 1–9999 exists, print “error” instead of the number.

## Sample input

```
3 20 40 40
3 33.3 33.3 33.3
2 33 67
1 100.0000
4 3.75 4.25 22.00 70.00
2 49 51
2 50 51
2 49 50
0
```

## Output for sample input

```
Case 1: 5
Case 2: 3
Case 3: 3
Case 4: 1
Case 5: 400
Case 6: 35
Case 7: 200
Case 8: error
```