Hello coders, Welcome to the CSI - Fill in the code!

1. All solutions of these question can be submitted in any one language - python, java or C
2. You have to submit these solutions by uploading them to your git folder. Git folder name should be - *FITC_name*
3. The link of your git repo needs to be submitted in the google form
4. Keep repo **public**
5. Alternatively you can also upload the folder on your google drive and submit its link in the form with editor access in sharing

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Questions start from next page

Question 1 (marks)

Roshan likes the Number 5 very much.

Roshan has begun to look for occurrences of four anywhere. He has a list of **M** integers, for each of them he wants to calculate the number of occurrences of the digit **5** in the decimal representation.

Input - The first line of input consists of a single integer **T**, denoting the number of integers in Roshan's list. Then, there are **T** lines, each of them contain a single integer from the list.

Output

Output **T** lines. Each of these lines should contain the number of occurrences of the digit **5** in the respective integer from Roshan's list.

Input:

```
4
557575
228
6665
50
```

Output:

```
4
0
1
1
```

Constraints

1 ≤ T ≤ 10^5

Question 2- (7marks)

A person conducted a voting about **N** of his opinions. A_i percent of people voted for opinion number **i**. This statistics is called valid if sum of all A_i is equal to **100**.

Now let us define rounding up of a statistics **A**.

- If A_i is not an integer, it will be rounded up to next integer.
- Otherwise it will be left as it is.

e.g. **4.1** became **5**, **4.9** became **5** but **6** will still be **6**.

Now let us consider a statistics **B** of size **N** in which each of B_i is an integer. Now he wants to know whether there exists some valid statistic **A** of size **N** (may contain real numbers) such that after rounding it up, it becomes same as **B**?

Input

- First line of input contain integer **T** - number of test cases.
- For each test, case first line contains integer **N** - number of opinions.
- Next line contains **N** integers $B_1, B_2, ..., B_N$ as defined in the problem.

Output

For each test case, output **YES** or **NO** denoting the answer of the problem, i.e. if there exists some statistics **A** which could be rounded to make it **B**, print **YES** otherwise **NO**.

Input:

```
3
3
30 30 30
4
25 25 25 25
2
50 51
```

Output:

```
NO
YES
YES
```

- In test case 1, There can not be any **A** which could be rounded up to get **B**. Hence answer is NO.
- In test case 2, In this case **A** = {25, 25, 25, 25}. After rounding we get {25, 25, 25, 25} which is equal to **B**. Hence answer is YES.
- In test case 3, **A** = {49.5, 50.5}. After rounding up we get {50, 51} which is equal to **B**. Hence answer is YES.
- i.e if there exists some hypothetical statistic **A** which when rounded off and summed produces **B**, then print **YES** otherwise **NO**

Question 3 - (8marks)

The cost of a product on each day is given in an array, find the max profit that you can make by buying and selling in those days. For example, if the given array is {100, 180, 260, 310, 40, 535, 695}, the maximum profit can be earned by buying on day 0, selling on day 3. Again buy on day 4 and sell on day 6. If the given array of prices is sorted in decreasing order, then profit cannot be earned at all.
Array is given in code.