Problem I. Internal Happiness

Source file name:	Internal.c, Internal.cpp, Internal.java, Internal.py
Input:	Standard
Output:	Standard
Time / Memory limit:	1/1/1 (C++/Java/Python) second(s) / 64 megabytes
Author(s):	Eddy Ramírez Jiménez - UNA & TEC Costa Rica

Students worldwide are engaging with the STEAM curriculum, which integrates Science, Technology, Engineering, Arts, and Mathematics. In some schools, grades are assigned based on students' performance in these subjects.

At certain institutions, an unusual method is used to announce grades: students are called one by one in alphabetical order to present their grades in front of their classmates. This process reveals each student's grades to the entire group.

This public announcement leads to students experiencing internal emotions of happiness at three distinct levels (though they may not outwardly express it):

- Happy: When exactly 3 out of 5 of their grades are higher than those of all the previous students.

- Happier: When exactly 4 out of 5 of their grades are higher than those of all the previous students.

- Happiest: When all 5 of their grades are higher than those of all the previous students.

Your task is to determine, given the grades of all students in order, how many students felt happy, happier, and happiest when their grades were announced.

Input

A single test case.

The first line contains a integer number n $\left(1 \leq n \leq 10^3\right)$ indicating the number of students at the school.

The next n lines contains five integers each separated by space, denoting the grades of the student. $0 \leq g_i \leq 100$.

Output

Three numbers separated by space on a single line. The first is the number of students that were happy when they received their grade, the second one the number of students who were happier when they received their grade and the third number, the amount of students who were happiest when received their grade.

Example

Input	Output
6 1 1 1 1 1 2 2 2 2 2 2 2 3 3 3 3 3 3 4 4 5 5 5 5 5 6 6 5 5 5	1 1 3

Use fast I/O methods