Births of graduates by seasons

A university stores information of its graduates: the birth date (year, month, day), the start year of the university studies and the year of graduation.

Write a program that gives the count of students who were born in each season.

Input

The first line of the *standard input* contains the count of graduates (1≤N≤100). The next N lines contain the data about a graduate each, in the form of 5 integers separated by spaces. The first three numbers are the parts of birth date: year (1950≤Y≤2000), month (1≤M≤12) and day (1≤D≤30). The fourth number is the start year (2000≤S<2020), and the last number is the year of the graduation (S≤G<2020).

Output

The first line of the *standard output* should contain the count of graduates born in spring, summer, autumn and winter (in this order).

Example

Input

```
6
1980 1 1 2007 2012
1970 6 2 2007 2012
1999 12 1 2007 2012
1982 10 1 2000 2005
1982 9 9 2000 2012
1982 1 1 2000 2005
```

Output

```
0 1 2 3
```

Limits

Time limit: 0.1 second

Memory limit: 32 MB

Evaluation: In 40% of tests, the count of data is ≤20