

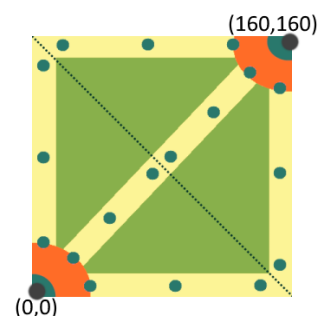
Problem E

Online Gaming

Multiplayer online battle arena (MOBA) is a popular genre of video game where two teams of players fight on a large battlefield. The field can be modelled as a 160-by-160 metre grid where the bottom left corner is $(0, 0)$ and the top right corner is $(160, 160)$.

We can classify players based on their location on the map:

- If a player is no more than 10 metres from the main diagonal (from $(0, 0)$ to $(160, 160)$), they are in the middle lane.
- Otherwise, a player is in the top lane if they are above the main diagonal, and in the bottom lane if they are below the main diagonal.



Write a program to calculate the number of players in each lane.

Input

The first line contains a single integer $T \leq 100$ giving the number of test cases. Each test case starts with a line with an integer N ($1 \leq N \leq 1000$), the number of players on the map. The next N lines contain two integers x_i and y_i ($0 \leq x_i, y_i \leq 160$), which are the coordinates of the i^{th} player on the map.

Output

For each test case, output a single line in the form “top: T , mid: M , bot: B ” where T , M and B are the number of players in the top, middle, and bottom lanes respectively.

Sample Input

```
2
1
80 81
2
1 150
150 1
```

Sample Output

```
top: 0, mid: 1, bot: 0
top: 1, mid: 0, bot: 1
```