

# Find The Red Robot



So the WARHW has come to an end, and every office has received a mysterious Red Hat robot. Now, when the robot is started it asks for an input number ( $N$ ) and then it starts taking  $N$  turns in the following manner:

- On the first turn, the robot goes **1** unit to the right.
- On the second turn, the robot goes **2** units up.
- On the third turn, the robot goes **3** units to the left.
- On the fourth turn, the robot goes **4** units down.
- On the fifth turn, the robot goes **5** units to the right.
- And so on.

Assuming that the robot is initially standing at the origin (0,0) of the Cartesian Co-ordinate System, can you determine the position of the robot after  $N$  turns?

## Input Format

The first line contains a single integer,  $T$ , denoting the number of test cases followed by  $T$  lines describing the test cases.

Each line contains a single integer - the value of  $N$ , for the corresponding test case.

## Constraints

$$1 \leq T \leq 100$$

$$1 \leq N \leq 10^9$$

## Output Format

For each test case output a single line, containing two integers - the coordinates of the robot after performing  $N$  turns.

## Sample Input 0

```
4
1
2
3
4
```

## Sample Output 0

```
1 0
1 2
-2 2
-2 -2
```

## Explanation 0

Initially, the robot is standing at the point (0,0).

- On the first turn, it moves 1 unit to the right, thus its new position becomes (1,0).
- On the second turn, it moves 2 units up, thus its new position becomes (1,2).
- On the third turn, it moves 3 units to the left, thus its new position becomes (-2, 2).

- On the fourth turn, it moves 4 units down, thus its new position becomes  $(-2, -2)$ .