

# Freaky Numbers

Patterns exist everywhere when it comes to numbers. One such pattern is the difference of two consecutive squares: they are always odd! And not only that, as you go up by adjacent squares, the difference becomes the next odd number! For instance,  $|2^2 - 1^2| = 3$ .  $|3^2 - 2^2| = 5$ . Freaky! So what about the sums of adjacent squares? Who knows? I'm introducing a brand new number: DSDS numbers! (Difference of Sum and Difference of Squares). It goes like this: let  $A$  be the sum of two adjacent squares, and  $B$  be the (positive) difference of the same adjacent squares. Now take the (positive) difference between  $A$  and  $B$ , and you get a DSDS number! Simple right? Well now your task is to deduce the original adjacent roots, given the DSDS number. Good luck!

## Input

Input begins with a single number  $N$ , the number of DSDS numbers to deduce. Each of the next  $N$  lines has a single positive DSDS number no greater than  $1000000000000000$  ( $10^{15}$ ).

## Output

Output a single line per DSDS number, stating "The DSDS roots of  $D$  are  $X$  and  $Y$ " where  $D$  is the original DSDS number, and  $X$  and  $Y$  are the "roots" of the DSDS number.

## Sample Input

```
3
2
50
162
```

## Sample Output

```
The DSDS roots of 2 are 1 and 2
The DSDS roots of 50 are 5 and 6
The DSDS roots of 162 are 9 and 10
```