8355 Fermat's Optimization Problem

onsider the error function $F(x, y, z, n) = |x^n + y^n - z^n|$, where $|v|$ means the absolute value of v. Given two positive integers n and z, our problem is to find two positive integers x and y such that $x < y < z$ and the error value $F(x, y, z, n)$ is minimized.

For example, if we are given $n = 3$ and $z = 9$, then the solution is: $x = 6$ and $y = 8$. This solution yields the error value 1.

Input

The first line contains the number of test cases T ($T < 10$). Each subsequent line corresponds to a test case, which contains two positive integers n ($2 < n < 10$) and z ($1 < z < 100000$).

Output

For each test case, output the value of x, y, and $F(x, y, z, n)$ in a line, separated by spaces.

There may be multiple values of x and y that minimize $F(x, y, z, n)$, and you may output any of them.

Sample Input

```
2
3 9
3 7
```

Sample Output

```
6 8 1
5 6 2
```