

Problem A. Fermat's Optimization Problem

Input file: standard input
Output file: standard output
Time limit: 2s

Consider 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.

Example

standard input	standard output
2	6 8 1
3 9	5 6 2
3 7	