Basic Math

Task: You are given $U, V, W \in \{1, \ldots, 12000\}$. We define

$$S = \left\{(x, y, z) \in \mathbb{Z}^3 \,:\, (x \neq y) \wedge (x \neq z) \wedge (y \neq z) \right. \\ \left. \wedge (x + y + z = U) \wedge (xyz = V) \wedge (x^2 + y^2 + z^2 = W) \right\}.$$

Output the lexicographic smallest element in S. In case that S is empty, print "empty set".

Input: There will be several test cases concatenated. The first line contains a positive integer n that specifies the number of test cases. In each of the following n lines a test case will be described. A test case will be described by U, V, W.

Output: For each test case print in a single line x, y and z. If S is empty, print "empty set".

Sample Input:

```
3
1 1 1
88 1136 5298
42 420 842
```

Sample Output:

```
empty set
1 16 71
1 20 21
```