# Divide cuboid into cubes such that sum of volumes is maximum

> 给定一个长方体的长、宽、高，将其划分为数量最小的立方体且所有立方体的体积之和最大

假设每个立方体的边长为side，这个长方体的长、宽、高都会被这个side划分，所以只需要最大化side，同时保证长、宽、高可以被side划分，所以取长、宽、高的最大公约数

```
#include <bits/stdc++.h>

using namespace std;

typedef long long ll;

void divideCuboid(int &length, int &breadth, int &height) {
    ll cuboidVolume = length * breadth * height;
    int side = __gcd(length, __gcd(breadth, height));
    printf("%d %lld", side, cuboidVolume / (side * side * side));
}

int main() {
    int T;
    scanf("%d", &T);
    while (T--) {
        int length, breadth, height;
        scanf("%d %d %d", &length, &breadth, &height);
        divideCuboid(length, breadth, height);
    }
    return 0;

}
```