



# South Central USA Regional Programming Contest



## *Series Determination*

### **Introduction:**

Boudreaux and Thibodeaux aren't very good at math, so they need you to write a program that can determine the second degree polynomial used to generate a given sequence of three integers. As proof that you've figured out the polynomial, they want your program to print out the next 3 integers in the sequence.

You know that each sequence is generated by a polynomial of the form  $f(x) = Ax^2 + Bx + C$ , where A, B, and C are integers in the range  $(-10^3 \leq (A, B, C) \leq 10^3)$ . You are given the values  $f(0)$ ,  $f(1)$ ,  $f(2)$  and are to determine the values  $f(3)$ ,  $f(4)$ ,  $f(5)$ .

### **Input:**

Input to this problem will consist of a (non-empty) series of up to 100 data sets. Each data set will be formatted according to the following description, and there will be **no blank lines** separating data sets.

Each data set consists of a single line containing the space-separated integer values of the polynomial evaluated at 0, 1, and 2 (in that order). These values will be in the range  $(-10^3 \leq (f(0), f(1), f(2)) \leq 10^3)$ .

### **Output:**

For each data set, there will be exactly one line of output containing the space-separated integer values of the polynomial evaluated at 3, 4, and 5 (in that order). These values will be in the range  $(-10^4 \leq (f(3), f(4), f(5)) \leq 10^4)$ .

### **Sample Input:**

```
0 0 0
1 1 1
1 2 3
0 1 4
0 2 8
```

### **Sample Output:**

```
0 0 0
1 1 1
4 5 6
9 16 25
18 32 50
```

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