Add and Multiply

Given three integers A, B, C, you are allowed to perform exactly two operations on these numbers: an addition and a multiplication.

For instance, if A = 10, B = 3, C = 2, we can get (10 + 2) * 3 = 36.

What are the minimum and maximum values you can get by applying these two operations?

Input

The first line of input contains *T* (1<= T <= 200), the number of test cases to consider.

Each of the next *T* lines contains three integers *A*, *B*, and *C* (where -1,000,000 <= *A*, *B*, *C* <= 1,000,000).

Output

For each test case, output a line with the minimum and maximum values described in the statement.

Sample

Input
2
10 3 2
-3 2 -5

Output
16 50
-16 17