D. Sum of Two Sequences

Score: 1

CPU: 1s
Memory: 1024MB

Meera wants to become a Data Scientist. In order to learn the way of data analysis, she sought help from the great master Data Scientist, Zinnah the Analyzer. Under the supervision of Zinnah, Meera solves various analytical problem to improve her skills.

The problem Meera is solving today is called “Tale of Two Sequence : Sum of All”.

In this problem, Meera is given two arithmetic sequence by Zinnah. For each sequence, Meera is given the first term **A**, the difference between two consecutive values **D** and number of terms **K**.

Meera now must find the sum of all terms S, when both arithmetic sequences are considered together. That is, Meera needs to find $\mathbf{S = s_1 + s_2}$, where s_1 is the sum of all terms in first sequence and s_2 is the sum of all terms in second sequence.

For example, suppose we are given $A_1 = 1$, $D_1 = 1$, $K_1 = 10$ and $A_2 = 15$, $D_2 = -3$, $K_2 = 4$, then S = 97.

How? $A_1 = 1$, $D_1 = 1$, $K_1 = 10$ represents the sequence [1, 2, 3, 4, 5, 6, 7, 8, 9, 10] and $A_2 = 15$, $D_2 = -3$, $K_2 = 4$ represents [15, 12, 9, 6]. If we consider both sequence together then we find that the sum is ((1+2+3+4+5+6+7+8+9+10) + (15+12+9+6)) = 97.

Zinnah believes that Meera will be able to solve the problem eventually since she is a smart girl. Meanwhile, he decided to send the same problem to today’s programming contest, for all of you to solve. Have fun :).

Input

First line of the input will be a single integer **T**, indicating the number of test cases. Next **T** lines will follow, containing 6 integers, representing $\mathbf{A_1}$, $\mathbf{D_1}$, $\mathbf{K_1}$, $\mathbf{A_2}$, $\mathbf{D_2}$ and $\mathbf{K_2}$.

Constraints
$\mathbf{1 <= T, K_1, K_2 <= 10^5}$
$\mathbf{-10^5 <= A_1, D_1, A_2, D_2 <= 10^5}$

Output

For each test case, output the test case number and a single integer value which is the sum of all terms that occur in the two sequences. See sample input/output for details.

Sample

Input	Output
2	Case 1: 97

Input	Output
1 1 10 15 -3 4 1 2 10 1000 500 3	Case 2: 4600