CCSC:MW Programming Competition

Solve N Problems

You are given ***N*** problems. The problems are of three types, **'Type1'**, **'Type2'**, and **'Type3'**. There are ***t1*** 'Type1' problems, ***t2*** 'Type2' problems, and ***t3*** 'Type3' problems. You can solve each problem using any of the three methods, 'A', 'B', and 'C'. You can use a particular method only a limited number of times that is, method 'A' for ***a*** times, method 'B' for ***b*** times, and method 'C' for ***c*** times. You are given a 3×3 matrix, A where A[i][j] represents the effort to solve a ***Type i*** problem using ***Method j***. You are required to find the minimum effort required to solve all the problems.

Input

- The first line contains an integer ***T*** denoting the number of test cases. **T test cases follow.**
- The first line of each test case contains an integer ***N*** denoting the number of problems.
- The second line of each test case contains three space-separated integers denoting the values of t1, t2, and t3 respectively.
- The third line of each test case contains three space-separated integers denoting the values of a, b, and c respectively.
- Next three lines of each test case contain three space-separated integers of matrix A.

Output

For each test case, print the minimum effort required to solve all the problems in a new line.

Example 1

Input:

1

9

5 1 3

2 7 0

10 8 10

6 2 9

2 10 7

Output:

56

Explanation

For the only testcase, the optimal solution is -

- solve five 'Type1' problems using method 'B', costing 5∗8=40.

- solve one 'Type2' problem using method 'B', costing $1*2=2$.
- solve two 'Type3' problems using method 'A' and one 'Type3' problem using method 'B', costing $2*2+1*10=14$.

Thus, total effort is $40+2+14=56$.

Example 2

Input:

3

4

4 0 0

1 0 3

9 6 10

8 6 9

1 7 2

5

0 1 4

5 0 0

5 3 10

8 6 9

4 8 8

10

0 10 0

2 8 0

9 4 6

7 3 6

2 1 7

Output:

```
39
24
38
```