

Square Permutation I

Input file: **standard input**
Output file: **standard output**
Time limit: 3 seconds
Memory limit: 1024 megabytes

Give two permutations p and q of length n . It is guaranteed that n is an odd number. You must perform exactly one of the following operations for each position $i \in [1, n]$:

1. Perform no operation at no cost.
2. Spend a cost of x_i to either modify p_i to p_i^2 or modify q_i to q_i^2 .
3. Spend a cost of y_i to modify both p_i to p_i^2 and q_i to q_i^2 .

Please find the minimum cost required to make the median of array p equal to A and the median of array q equal to B . If it's impossible, output -1 .

Input

Each test contains multiple test cases. The first line contains the number of test cases t ($1 \leq t \leq 10^4$). The description of the test cases follows.

The first line of each test case contains three single integers n, A, B ($1 \leq n \leq 10^5, 1 \leq A, B \leq n^2$).

The second line gives n positive integers, representing the permutation p .

The third line gives n positive integers, representing the permutation q .

The fourth line gives n positive integers, representing the array x .

The fifth line gives n positive integers, representing the array y ($1 \leq x_i \leq y_i \leq 10^4$).

It is guaranteed that the sum of n over all test cases does not exceed 10^5 .

Output

For each test case, output -1 if it is impossible.

Otherwise, output the minimum cost.

All outputs must be printed on separate lines.

Example

standard input	standard output
3	7
7 6 7	0
7 3 5 6 2 4 1	10000
1 6 3 4 2 7 5	
5 1 1 4 4 1 1	
6 4 6 6 6 1 1	
9 5 5	
1 2 3 4 5 6 7 8 9	
9 8 7 6 5 4 3 2 1	
1 2 3 4 5 6 7 8 9	
2 3 4 5 6 7 8 9 9	
3 2 3	
1 2 3	
2 3 1	
10000 1 1	
10000 1 1	