Challenge 2 (Day 3)

HackerRank

You are given an array A with size N (indexed from 0) and an integer K. Let's define another array B with size N · K as the array that's formed by concatenating K copies of array A.

For example, if A = {1, 2} and K = 3, then B = {1, 2, 1, 2, 1, 2}.

You have to find the maximum subarray sum of the array B. Fomally, you should compute the maximum value of Bi + Bi+1 + Bi+2 + ... + Bj, where 0 ≤ i ≤ j < N · K.

Input Format

- The first line of the input contains a single integer T denoting the number of test cases. The description of T test cases follows.
- The first line of each test case contains two space-separated integers N and K.
- The second line contains N space-separated integers A0, A1, ... , AN-1.

Constraints

- 1 ≤ T ≤ 10
- 1 ≤ N ≤ 100000
- 1 ≤ K ≤ 100000
- -100000 ≤ Ai ≤ 1000000 for each valid i

Output Format

For each test case, print a single line containing the maximum subarray sum of B.

Sample Input 0

```
2
2 3
1 2
3 2
1 -2 1
```

Sample Output 0

```
9
2
```

Explanation 0

- Test case 1: B = {1, 2, 1, 2, 1, 2} and the subarray with maximum sum is the whole {1, 2, 1, 2, 1, 2}. Hence, the answer is 9.
- Test case 2: B = {1, -2, 1, 1, -2, 1} and the subarray with maximum sum is {1, 1}. Hence, the answer is 2.