Q1:-

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**

* 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**.

**Output**

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

**Constraints**

* 1 ≤ **T** ≤ 10
* 1 ≤ **N** ≤ 105
* 1 ≤ **K** ≤ 105
* -106 ≤ **Ai** ≤ 106 for each valid **i**

**Subtasks**

**Subtask #1 (18 points):** **N** · **K** ≤ 105

**Subtask #2 (82 points):** original constraints

**Example**

**Input:**

2

2 3

1 2

3 2

1 -2 1

**Output:**

9

2

**Explanation**

**Example 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.

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

Q-:2

**Maximum Product Subarray**

Medium

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Given an integer array nums, find the contiguous subarray within an array (containing at least one number) which has the largest product.

**Example 1:**

**Input:** [2,3,-2,4]

**Output:** 6

**Explanation:** [2,3] has the largest product 6.

**Example 2:**

**Input:** [-2,0,-1]

**Output:** 0

**Explanation:** The result cannot be 2, because [-2,-1] is not a subarray.

Q-3:

#### You are given an array A of size N, you have to construct a Product Array P (of same size) such that P[i] is equal to the product of all the elements of A except A[i]. The constraint is that you are not allowed to use division operator.

#### Note: This question was asked in interview rounds of Uber.

##### Input format:

**The first line of input contains an integer T denoting the number of test cases. Each test-case contains two lines of input. The first line of each test case contains a single integer that denotes size of the array, N. The following line of input contains N elements, separated by spaces.**

##### Output format:

**For each testcase, print the Product array P.**

##### Constraints:

**1 <= T <= 10**

**1 <= N <= 10**

**1 <= Ai <= 20**

##### Sample Input 1:

**2**

**5**

**10 3 5 6 2**

**2**

**12 20**

##### Sample Output 1:

**180 600 360 300 900**

**20 12**

##### Explanation:

**Testcase1: For the product array P, at i=0 we have 3\*5\*6\*2. At i=1 10\*5\*6\*2. At i=2 we have 10\*3\*6\*2. At i=3 we have 10\*3\*5\*2. At i=4 we have 10\*3\*5\*6**

**So, P is 180 600 360 300 900**

**Testcase2: For the product array P, at i=0, we have 20. At i=1, we have 12.**

**So, P is 20 12.**