# Problem L. Let's Go! New Adventure

In Pigeland, *Pishin* is a popular open-world action RPG where users can play multiple characters. Each character has an independent *adventure rank*, which increases as they earn experience points (EXP) while being played. Initially, every character starts with an adventure rank of level 0 and can progress up to a maximum level of $m$. To advance from level $(i-1)$ to level $i$ $(1 \le i \le m)$, the character is required to earn $b_i$ EXP. The higher the current rank, the more difficult it becomes to level up, meaning $b_i \le b_{i+1}$ always holds for all $i$ from 1 to $m$.

Grammy plans to play *Pishin* for the next $n$ days. As a rich girl, her *Pishin* account has an infinite number of characters. However, being a lazy girl, all characters in her account start with an adventure rank of level 0 at the beginning of the $n$ days. Each day, Grammy will select exactly one character to play, but once she stops playing a character, she cannot resume playing that character on any future day. In other words, she can only continue playing the same character on consecutive days.

On the $i$-th day, Grammy will earn $a_i$ EXP for the character she plays. This means that if she plays a character continuously from the $l$-th day to the $r$-th day (both inclusive), the character's adventure rank will increase to level $k$, where $k$ is the largest integer between 0 and $m$ such that the total EXP earned (which is $\sum_{i=l}^{r} a_i$) is greater than or equal to the requirement of leveling up to $k$ (which is $\sum_{i=1}^{k} b_i$).

Being a greedy girl, Grammy wants to maximize the total sum of adventure ranks across all her characters after the $n$ days. However, as a single-minded girl, she doesn't want to play too many different characters. To balance this, she introduces a penalty factor of $c$. Her goal is to maximize the total sum of adventure ranks across all characters after the $n$ days, minus $c \times d$, where $d$ is the number of different characters she plays. As Grammy's best friend, your task is to compute the maximum value she can achieve under the optimal strategy for selecting characters.

## Input

There are multiple test cases. The first line of the input contains an integer $T$ $(1 \le T \le 5 \times 10^4)$ indicating the number of test cases. For each test case:

The first line contains three integers $n$, $m$ and $c$ $(1 \le n, m \le 5 \times 10^5,\ 0 \le c \le 5 \times 10^5)$.

The second line contains $n$ integers $a_1, a_2, \cdots, a_n$ $(0 \le a_i \le 10^{12},\ 0 \le \sum_{i=1}^{n} a_i \le 10^{12})$.

The third line contains $m$ integers $b_1, b_2, \cdots, b_m$ $(0 \le b_i \le 10^{12},\ b_i \le b_{i+1},\ 0 \le \sum_{i=1}^{m} b_i \le 10^{12})$.

It is guaranteed that neither the sum of $n$ nor the sum of $m$ of all test cases will exceed $5 \times 10^5$.

## Output

For each test case, output one line containing one integer, indicating the maximum value.

## Example

| standard input | standard output |
|---|---|
| 2<br>5 4 2<br>1 0 3 1 2<br>0 1 1 2<br>4 5 1<br>7 16 23 4<br>1 3 6 20 20 | 3<br>6 |

## Note

For the first sample test case, one solution is to use the first three days to get a character with adventure

rank 4 and the next two days to get another character with adventure rank 3. This gives us a value of $(4-2)+(3-2)=3$.

For the second sample test case, we can play a different character each day; this gives us adventure ranks 2, 3, 3, and 2, respectively. So the value is $(2-1)+(3-1)+(3-1)+(2-1)=6$.