# Minimum Number of Modulo Operations

Consider a sequence with $N$ natural numbers: $v_1, v_2, ..., v_N$. We want to compute the value $(v_1+...+v_N)$ *mod P*, where **A mod B** denotes the remainder of the integer division of A at B. However, in order to compute the result, we can use only one old computer, which presents the following restrictions: it can only perform the **modulo** operation on the sum of a contiguous subsequence of numbers $v_i, v_{i+1}, ..., v_{i-1}, v_j$, if this sum is less than or equal to $PxQ$ (i.e. only if $v_i+v_{i+1}+...+v_{j-1}+v_j \leq PxQ$).

Thus, in order to compute the result, we will use the following strategy: As long as the sequence contains more than one number, we select a contiguous subsequence $v_i, v_{i+1}, ..., v_{i-1}, v_j$ , such that $v_i+v_{i+1}+...+v_{j-1}+v_j \leq PxQ$, we compute the result $x=(v_i+v_{i+1}+...+v_{j-1}+v_j)$ *mod P* and then we replace the subsequence by the number $x$ in the original sequence (i.e. the j-i+1 numbers are replaced by the number $x$). Note that we are allowed to select a subsequence containing only one element.

Let's consider the following example: N=5, P=3, Q=10 and the sequence is 7, 9, 14, 6, 2. We select the subsequence 9, 14, 6 first (9+14+6=29 ≤ 3x10=30), we compute the value (9+14+6) mod 3=2 and we replace the subsequence by the computed value, 2. The original sequence becomes 7, 2, 2. Then, we select the subsequence 7, 2, 2, we compute the value (7+2+2) mod 3=2, and we replace the subsequence by the value 2. The original sequence becomes 2, and we stop, because it contains only one number. We performed two modulo operations.

Find the minimum number of modulo operations which need to be performed in order to obtain the final result (i.e. a sequence with just one number).

## Input Data
The first line of input contains the number $T$ of test cases which are given next. The first line of a test case contains three natural numbers, separated by blanks: N (2≤N≤30), P (2≤P≤1,000,000) and Q (2≤Q≤30). The second line contains the natural numbers $v_1, ..., v_N$, in order, separated by blanks. We have that $0 \leq v_i \leq PxQ$.

## Output Data
For each test case you should print one line, containing the minimum number of modulo perations which need to be performed.

## Example

| Standard Input | Standard Output |
|---|---|
| 2<br>5 3 10<br>7 9 14 6 2<br>13 10 2<br>1 2 3 4 5 6 7 8 9 10 11 12 13 | 2<br>6 |