Problem H. High Load Database

Time limit: 2 seconds
Memory limit: 512 megabytes

Henry profiles a high load database migration script. The script is the list of n transactions. The i-th transaction consists of a_i queries. Henry wants to split the script to the minimum possible number of batches, where each batch contains either one transaction or a sequence of consecutive transactions, and the total number of queries in each batch does not exceed t.

Unfortunately, Henry does not know the exact value of t for the production database, so he is going to estimate the minimum number of batches for q possible values of t: $t_1, t_2, \ldots, t_q$. Help Henry to calculate the number of transactions for each of them.

Input

The first line contains a single integer n — the number of transactions in the migration script ($1 \le n \le 200\,000$).

The second line consists of n integers $a_1, a_2, \ldots, a_n$ — the number of queries in each transaction ($1 \le a_i$; $\sum a_i \le 10^6$).

The third line contains an integer q — the number of queries ($1 \le q \le 100\,000$).

The fourth line contains q integers $t_1, t_2, \ldots, t_q$ ($1 \le t_i \le \sum a_i$).

Output

Output q lines. The i-th line should contain the minimum possible number of batches, having at most t_i queries each. If it is not possible to split the script into the batches for some t_i, output "`Impossible`" instead.

Remember that you may not rearrange transactions, only group consecutive transactions in a batch.

Example

standard input	standard output
6 4 2 3 1 3 4 8 10 2 5 4 6 7 8 8	2 Impossible 4 5 4 3 3 3