

students

You have an array A of size N , your teacher has given you Q task.

For each task you have to find $B[i]$ element in sorted order of all pairwise sum.

That is you have give the answer of following pseudo-code

```
(every array here is 1-indexed)
def ask(k):
    sums = []
    for i ← 1 to n:
        for j ← i to n:
            sums.append(A[i] + A[j])
    sort(sums)
    return sum[k]
```

Constraints:

$N \leq 100000$
 $-10^9 \leq A[i] \leq 10^9$
 $Q \leq 10$
 $1 \leq B[i] \leq N*(N+1)/2$

Input:

N Q
 $A[1]$ $A[2]$... $A[N]$
 $B[1]$ $B[2]$... $B[Q]$

Output:

Consists of Q line, each line is answer of the query.

Sample Input 1:

5 2
1 10 4 6 3
6 15

Sample Output 1:

7
20

Subtasks:

10% : $A[i] = A[i-1]$ for every $2 \leq i \leq N$

20% : $N \leq 3000$

20% : For all (i, j) ; $1 \leq i, j \leq N$ either $A[i] = A[j]$
or $A[i] = -A[j]$

50% : No other constraints

Author: sleepntsheep