Tony's Friends

Tony has N friends . They are invited to his birthday party . Each friend has satisfying factor which is equal to the number of gifts which they are expecting . Tony wants to satisfy at - least K friends but he is unaware of their satisfying factors . So Tony starts distributing the gifts . As soon as friend is satisfied , he won't take more gifts .

Tony will follow distribution strategy so as to minimize the number of gifts needed to satisfy at least K ofhis friends . Find the minimum number of gifts which Tony should carry with himself in the best case .

Input Format

First line contains an integer T (the number of test cases) . Then first line of each test case contains an integer N : number of friends . Then N space separated integers follow which are the satisfying factors . Last line of each test case consists of an integer K , where k is the number of friends to be satisfied .

Constraints

1 <= T <= 10 1 <= N , Satisfying factor <= 100000 1 <= K <= N

Output Format

For each test case print in new line the minimum number of gifts that Tony should carry.

Sample Input :

2

2

5 11

1

3

5 77 2

2

Sample Output :

5

7

Sample Input 0

```
2
2
5 11
1
3
```

/

```
5 77 2
2
```

Sample Output 0

```
5
7
```

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