

Problem5

You are given an array of weights of n objects and your task is to select minimum number of objects whose sum of weights is exactly equals to some given k .

Input

Input:

Line 1 - Number of test cases T (≤ 10) followed by 2 lines for each test case

Line 2 - Number of objects n (≤ 20) and total weight k ($\leq 10^4$)

Line 3 - weights ($\leq 10^4$) of n objects (each separated by space)

Output

Minimum number of objects whose weights sums to k .

Example

Input:

```
2
5 9
10 9 4 3 5
3 7
1 2 3
```

Output:

```
1
impossible
```

Explanation: For 1st case the two combinations are possible:
(9), (4,5) hence minimum no of objects is 1

For 2nd case there is no combination possible hence impossible.