## B Nobel (professional)

A scientist, aspiring to the Nobel Prize, made a series of $n$ measurements and received all possible results from the set $\{1,2,3, \ldots, n-1, n\}$. The scientist knows that if he could only obtain $\mathrm{s} / \mathrm{k}$ as a result, the Nobel Prize would be his. He decided to disregard all but k measurements, such that the average of the remaining ones is $\mathrm{s} / \mathrm{k}$. Help him with this task. The stakes are high as the scientist has offered to share the award.

## Multiple test cases

The first line of the input contains $Z \leq 8000$ - the number of test cases. $Z$ descriptions of single test cases follow.

## Single test case

The input contains one line with three space-separated integers $n, s$ and $k$.

## Bounds

Common: $1 \leq \mathrm{k} \leq \mathrm{n} \leq 40000,0 \leq \mathrm{s} \leq 10^{9}$.

## Output

Basic: If there exist $k$ different elements of the set $\{1,2, \ldots, n\}$ whose average is $s / k$, the only line of the output should contain the word YES. Otherwise, output NO.

Professional: The first row should be as in the basic version. Additionally, if the answer is YES, output a second line containing a binary string of length $n$ (containing ones and zeroes, not separated by spaces). A 1 on position i in the string means that the measurement i should be retained by the scientist, 0 - that it should be disregarded.

## Sample input

3
362
573
111
Sample output for the professional version
NIE
TAK
11010
TAK
1

