Yummy Cakes (Y)

Memory limit: 1024 MB   Time limit: 1.00 s

Dwarf the Sweet Tooth is preparing for a journey and needs to pack exactly S cakes (for an S-day adventure, because one cake a day keeps the doctor away). In his cellar, he has N boxes, each containing a different number of cakes: the first box contains 1 cake, the second contains 2 cakes, and so on, with the N-th box containing N cakes. However, he wants to open exactly K boxes (and take all the cakes from them, of course). Help him decide which boxes to open!

Input

The first line of input contains a single integer T, the number of test cases. Each test case is a single line containing three integers N, S, and K.

Output

For each test case, output a single line containing YES if it is possible to select exactly K boxes that together contain exactly S cakes, and NO otherwise. If the answer is YES, follow this with a second line containing a string of N digits, where the i-th digit is 1 if the Dwarf should open the i-th box, and 0 otherwise.
If there are multiple valid answers, you may print any of them.

Limits

$1 \leq T \leq 8\,000$,
$1 \leq K \leq N \leq 40\,000$,
$0 \leq S \leq 10^9$.

Example

Input	Output
3	NO
3 6 2	YES
5 7 3	11010
1 1 1	YES
	1