Klothes (klothes)

Memory limit: 512 MB Time limit: 1.00 s

What an unsmurfy day! Smurfette just found out that someone (probably Jokey Smurf) has stolen all of her clothes and she'll need to buy new ones. There are n sets of clothes in the shop each having different integer price from 1 to n smurfcoins. Since smurfiness of an article of clothing is proportional to its price Smurfette wants to spend all of her s smurfcoins. However her wardrobe will fit only k clothes so she needs to buy exactly k (having empty places in a wardrobe is bad for her image).

Input

First line of input file contains the number of testcases t ($t \leq 8000$).
Each testcase consists of a single line containing three integers n, s, and k ($1 \leq k \leq n \leq 40\,000$, $0 \leq s \leq 10^9$), where n is the number of clothes available in the shop, k is the number of clothes Smurfette wants to buy, and s is the amount of smurfcoins she wants to spend.

Output

For each testcase output on a single line the word `YES` if it is possible to buy k clothes so that their price is s, or `NO` otherwise. If the answer is `YES` then on the following line output a string of n digits $a_1a_2a_3 \ldots a_n$, where a_i should be 1 if Smurfette should buy article of clothing with price i, otherwise a_i should be 0.

Example

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