

Problem A. Continuous 1

Time limit 2000 ms

Mem limit 1048576 kB

Problem Statement

You are given a string of length N , $S = S_1 S_2 \dots S_N$, consisting of **0**, **1**, and **?**.

We like to replace every **?** with **0** or **1** so that all of the following conditions are satisfied.

- S contains exactly K occurrences of **1**.
- These K occurrences of **1** are consecutive. That is, there is an i ($1 \leq i \leq N - K + 1$) such that $S_i = S_{i+1} = \dots = S_{i+K-1} = \mathbf{1}$.

Determine whether there is exactly one way to replace the characters to satisfy the conditions.

You have T test cases to solve.

Constraints

- $1 \leq T \leq 10^5$
- $1 \leq K < N \leq 3 \times 10^5$
- S is a string of length N consisting of **0**, **1**, and **?**.
- The sum of N across the test cases is at most 3×10^5 .

Input

The input is given from Standard Input in the following format:

```
T
case1
⋮
caseT
```

Each case is in the following format:

N K
 S

Output

Print T lines. The i -th line should contain **Yes** if, for the i -th test case, there is exactly one way to replace the characters to satisfy the conditions, and **No** otherwise.

Sample 1

Input	Output
4	Yes
3 2	No
1??	No
4 2	Yes
?1?0	
6 3	
011?1?	
10 5	
00?1???10?	

For the first test case, turning S into **101**, for instance, does not satisfy the conditions since the **1** s will not be consecutive. The only way to satisfy the conditions is to turn S into **110**.

For the second test case, we may turn S into **1100** or **0110** to satisfy the conditions, so there are two ways to satisfy them.

For the third test case, there is no way to replace the characters to satisfy the conditions.