552 Filling the Gaps

At the largest conference on coding and cryptography the following theorem needed a proof or a counterexample: Suppose you are given a set of words of equal length; each word consisting of `0`'s, `1`'s and/or `*`'s. Furthermore suppose the pattern of `*`'s is different for all words in the set. By this we mean: if you replace all `0`'s and `1`'s by say `$` you obtain different words.

The claim is: if you replace the `*`'s by `0`'s and `1`'s in all possible ways, then you obtain a set that is at least as big as the set you started with.

Example:
{ `10*, *0*, *00` } produces { `100, 101, 000, 001` }
{ `100, 101, 10*` } produces { `100, 101` }

Notice that the set in the latter example does not satisfy the condidtion mentioned above, so it does not provide a counterexample.

You program has to check for a number of cases:

1. Whether the pattern of `*`'s is different for all words in the set and:
2. Compute the number of words obtained by replacing the `*`'s by `0`'s and `1`'s.

The words will not be longer than 15 symbols.

Input

The input is a text-file that presents a sequence of sets. Each set is described as follows. The first line gives two integers: the length of the words and the number of the words. Then follow the words, each on a separate line. The end of the sequence of sets is indicated by a set with wordlength 0 and number of words equal to 0.

Output

The output is a textfile that contains one line for each set. if the pattern of `*`'s is different for all the words in this set this line should contain `YES` (in uppercase), followed by a space and the number of obtained words, otherwise it should contain `NO` (uppercase) only.

Sample Input

```
3 3
10*
*0*
*00
4 3
1100
1101
110*
0 0
```

Sample Output

```
YES 4
NO
YES 0
```