Problem E- Silly Walks

I leave the boys at 11:40 every night and start my walk home. Sometimes I get distracted, and sometimes I get lost. But I never stay put. Sometimes I just get bored and go in circles for fun. Just last night I walked by my home 5 times!

There are some very important rules. I never walk through a park: too many muggers. And I never walk by a police car, for the obvious reasons. And, and this is the most important and of all, AND: I **h**ave to be **h**ome by mightnid, um midnight, or my wife will kill me.

How many different silly walks will see me home without seeing me dead?

Input Specification:

Each test case will begin with two integers r and c (both ≤ 40) on a single line. To follow will be r lines of c characters each. The notation is as follows.

- I start my walk at the '`b`'.
- My wife is waiting at the '`w`'.
- A park is represented by '`p`'.
- A police car is represented by.. um.. '`p`'. (And why not?)
- An empty intersection is represented by '`.`'.

It takes 1 minute to walk between adjacent squares in the grid. Only NESW moves are allowed!

The input ends when $r \cdot c = 0$.

Output Specification:

You will output, each on its own line, the number of ways I can walk home without getting me dead.

Sample Input:

```
1 2
bw
3 4
b...
.p..
...w
0 0
```

Sample Output:

```
10
4522661
```