Pac-man P87462_en

Given a rectangular board with Pac-Man in it, tell if Pac-man can eat any power pellet. To get there, Pac-Man can only move horizontally and vertically, never crossing a wall. Moreover, Pac-Man can never be too close to a ghost. There should always be a cell between them, either horizontally, vertically, or diagonally. Look at the input and output examples.

Input

Input consists of several cases. Every case begins with the number of rows r and the number of columns c of the board. Follow r rows with c characters each. A 'P' indicates the initial position of Pac-Man. An 'F' indicates the position of a ghost (which does not move). A 'B' indicates the position of a pellet. An 'X' indicates a wall. A dot indicates an empty position. Assume $3 \le r \le 100$ and $3 \le c \le 100$, that the rows and columns on the edge of the board only have walls, and that each board has exactly one 'P'.

Output

For every case, tell if Pac-man can eat any pellet or not.

Sample input 1

```
6 10
XXXXXXXXXX
X........X
X....XXX.X
XP.F...X.X
X....F.XBX
XXXXXXXXXX
7 12
XXXXXXXXXXXX
X.......BF.X
X.........XX
X.F..P...X.X
X.......X..X
X.B..F.X.B.X
XXXXXXXXXXXX
3 5
XXXXX
XFPBX
XXXXX
6 8
XXXXXXXX
X.....BX
X.P.F..X
X...F..X
X.....BX
XXXXXXXX
```

Sample output 1

```
yes
no
no
no
```

Problem information

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