Tetris Bot 1.0

During long space journeys, there's plenty of time to get bored! Fortunately, your on-board computer incorporates the latest in electronic entertainment. Virtual reality, holograms, telepathic 4D cinema… but your favourite is Tetris.

With your tinkering skills, you want to make an AI play for you during your cryogenic sleep phases, to keep earning points instead of pausing the game.

At the moment, you are simply looking to get points by doing Tetris (removing four rows at once using a vertically oriented tetrimino bar). Write a program that determines if the game is in a situation where a Tetris could occur if a single well-placed piece were added.

For reasons of simplicity, the tetrimino bar must fall vertically as soon as it appears, without being able to slalom between potential obstacles (see example 2).

Data

Input

Lines 1 to 20: 20 lines of 10 characters each representing the game area. A # corresponds to a placed block and a . corresponds to a free square.

Output

If it is possible to do a Tetris in the given configuration, show BOOM <x>, x being the number of the column in which to insert a bar to trigger the Tetris. The columns are numbered from left to right from 1 to 10.

Otherwise, display NOPE.

Constraints

The configuration provided to you is a valid part of Tetris: there is no line already completed, each line will have at least one empty square.

Example 1

```
. . . . . . . . . .
. . . . . . . . . .
. . . . . . . . . .
. . . . . . . . . .
. . . . . . . . . .
. . . . . . . . . .
. . . . . . . . . .
. . . . . . . . . .
. . . . . . . . . .
# . . . . . . . . .
# # # . . # # # # .
. # # . . . # # # .
# # # . . # # # # .
# # # . # # # . # .
# # # # # # # # # .
# # # # # # # # # .
# # # # # # # # # .
# # # # # # # # # .
# . # # . # . # # #
# # # # . # # . # .
```

It is possible here to make a Tetris by putting a bar in the right column, so we will display BOOM 10.

Example 2

```
. . . . . . . . . .
. . . . . . . . . .
. . . . . . . . . .
. . . . . . . . . .
. . . . . . . . . .
. . . # # # . . . .
. . . . . # . . . #
. . . . . # . # . .
. # . . . # # # . .
# . . . . # . # # .
# # # . # # # # # #
# # # . # # # # # #
# # # . # # # # # #
# # # . # # # # # #
# # # # # . # # # #
# # # # # . # # # #
# # # # # . # # # #
# # # # # . # # # #
# . # # . # . # # #
# # # # . # # . # .
```

In this case, there are vertical holes that can accommodate a tetrimino bar, but they are covered by other pieces already placed. Although this situation could result in a Tetris in a real game (by moving the bar from column 3 to column 4 as it falls), this is limited to simplified rules where the piece must fall vertically. So you will have to display NOPE.