AP Computer Science Name _____
Black Box Challenge Lab

A 1978 Parker Brothers board game called "Black Box" involved locating deflecting baffles within the black box. The box must be represented by a 10 x 10 built-in character array.

Ten mirrors, denoted by '/' or '\' are placed randomly on the board. Two of them are shown at (1, 15) and (4,15). (We will refer to them by the (bottom, left) coordinates.

The numbers around the perimeter of the box represent lasers that shoot into the box. When you shoot the laser it will emerge at some other numbered position. For example, if laser 24 is shot it will emerge at position 21, having been deflected by both shown mirrors. In like manner, laser 4 will come out at 34.

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   2021222324252627282 9
19 . . . . . . . . . . 30
18 . . . . . . . . . . 31
17 . . . . . . . . . . 32
16 . . . . . . . . . . 33
15 . \ . . / . . . . . 34
14 . . . . . . . . . . 35
13 . . . . . . . . . . 36
12 . . . . . . . . . . 37
11 . . . . . . . . . . 38
10 . . . . . . . . . . 39
   0 1 2 3 4 5 6 7 8 9
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When you play the game the user has three options to choose from after the board and shot statistics has been shown:

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Choose:
    (1) Shoot a Laser
    (2) Guess at a mirror location
    (0) Quit the game

Enter choice:
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(1) Prompts the user for a number from 0 - 39 and outputs where the shot comes out.
(2) Prompts the user for 2 numbers from 0 - 39 that indicate a specific location on the board and tells the user if it is a mirror location or not. Outputting on board if true.
(0) Obvious

Once a mirror location is guessed correctly, it is then shown each time the board is displayed. The objective is to find all 10 mirrors with the fewest number of incorrect guesses and shots.

Your program should keep shot statistics: number of shots and guesses (correct and incorrect) and display after each round.

This program is to include a recursive method for shooting (checking of mirror locations.) There should also be a minimum of 3 other methods not including main.