Treasure Hunt

This is a game for two players, or it can be played against the computer at https://nrich.maths.org/6288 .

The grid below represents a beach. Player 1 chooses a point on the beach to hide the treasure and writes it down secretly. The treasure must be hidden where the grid lines intersect (cross).

Player 2 chooses coordinates to find the treasure with the fewest guesses. For each of player 2's guesses, player 1 must tell them the shortest distance you'd have to travel (along the grid lines) to reach the treasure.

Can you find a reliable strategy for choosing coordinates that will locate the treasure in the minimum number of guesses?