

PROBLEM

Consider a small airplane with n rows of seats, two seats per row, one on the right and one on the left of the central aisle. There are $2n$ passengers, each with a piece of hand luggage, and they all enter through a single access point.

Warm-up

Try to find an efficient rule for ordering the passengers as they board, assuming that they are all “identical” and therefore that the rule can depend only on their assigned seat. How does the approach change if the passengers are already on the plane and you want to regulate the disembarkation process?

Solution

After finding a method for measuring boarding time, we demonstrated that there are three equally effective methods that answer the question.

Challenge

An airplane has n rows and $2k$ seats per row, k on the right and k on the left, and a single entrance.

There are $2kn$ passengers, but they are not all the same: some have carry-on luggage, some have first-class tickets, etc.

What is a rule for ordering the passengers' boarding, which may depend both on their assigned seats and on the passengers' characteristics?

Solution

We are still trying to solve this part of the problem.