

Fall 2018: Barge Problem 3

101 Dalmations

Your friend Bianca loves to play games about dogs. Her favorite game is 101 Dalmations. The game is played as follows. There is a 100 card deck. Each card has a picture on it of some number of dalmations between 1 and 100, and that number appears at the top of the card. Every number of dalmations between 1 and 100 appears exactly once in the deck. The cards are shuffled and a hand of 50 cards is dealt to each of the two players. The players alternate turns, with a turn consisting of putting a card from a player's hand face up in the pot in the middle of the table, where the card remains for the rest of the game. As soon as a player puts a card in the pot so that the total number of dalmations in the pot (the sum of all the numbers on the cards in the pot) is divisible by 101, the game is over and that player wins. Bianca loves to play, so she doesn't care if you bring paper, pencils, or even a laptop you programmed which you use during the game to implement your strategy. You, on the other hand, love to win. Should you go first or second, and what should your strategy be to insure you win every time?

Semester Prizes (per team)

First Prize	\$1000
Second Prize	\$750
Third Prize	\$500

Rules

1. Form a team with other Lafayette students. Each team must have 3, 4 or 5 members.
2. Solve the Problem of the Week with your team. The problem will be posted in the Math Department and be available electronically for everybody on the Barge Mailing List.
3. Get your solution to Tom Yuster (yustert@lafayette.edu) by submission deadline. Email is the preferred method of submission, since Prof. Yuster has no intention of ever being in his office on Saturday at 6 a.m.
4. No internet or other online sources may be consulted during the process of solving the problem and/or submitting a solution. Failure to abide by this rule may result in disqualification of the team.

Submission Deadline: Saturday, Sept 29 at 6:00 a.m.