



DEPARTMENT OF MATHEMATICS

Math Club



## Michigan Epsilon Chapter of Pi Mu Epsilon

### Problem of the month: November 2019

#### A domino game



Nick and Bethany play a game. They take turns (Bethany goes first), and they start with an empty grid with dimensions 2 by 2020. On a player's turn, they place one domino onto the grid (and of course, the domino covers two squares on the grid that share a side). Dominoes may not overlap, so eventually there will be no more moves possible. The first person who cannot place their domino on the grid is the loser of the game.

One of the players has a winning strategy. In other words, that player has a plan that will allow them to win no matter what the other player does. Which player has the winning strategy? Justify your answer!

Please turn in your solutions to Patrick Bennett, by noon on **Friday November 29, 2019**. Strive for clarity, neatness and legibility! Solutions may be turned into the Math Dept office in **3319 Everett Tower**. Please include your name and email address. Electronic submissions may be sent to [patrick.bennett@wmich.edu](mailto:patrick.bennett@wmich.edu). If you are currently taking a math class, please include the instructor's name and the course number.

<http://www.wmich.edu/mathclub>