

# Warm-Up Problems: Chessboards

## Proofs & Mathematical Structures

College of the Atlantic. April 3, 2023

1. Is it possible to tile an  $8 \times 8$  chessboard with  $2 \times 1$  dominoes? See Fig. 1.

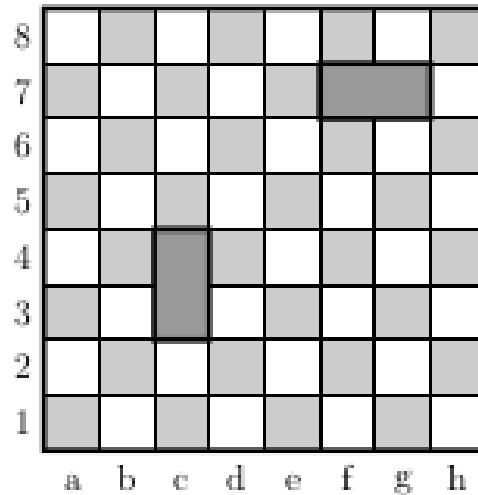


Figure 1: A chessboard with two dominoes on it. Image from *Proofs* by Jay Cummings.

2. Is it possible to tile a checkerboard with  $2 \times 1$  dominoes if the upper-left square of the checkerboard is removed, as shown in Fig. 2?

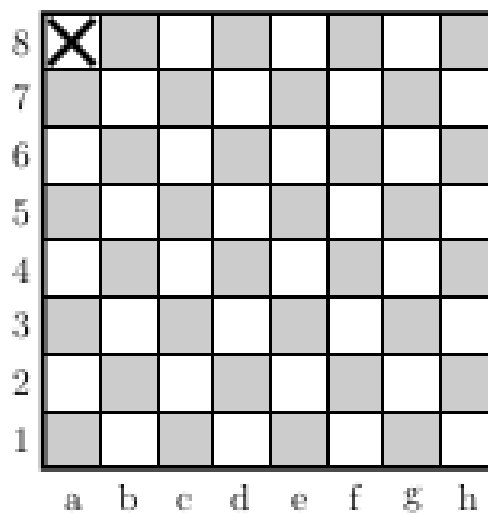


Figure 2: A chessboard with the upper-left square removed. Image from *Proofs* by Jay Cummings.

3. Is it possible to tile a chessboard with  $2 \times 1$  dominoes if the upper left and lower right squares have been removed, as shown in Fig. 3?

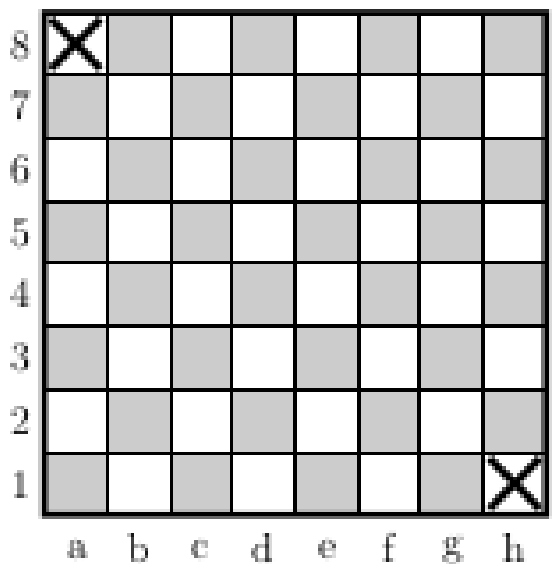


Figure 3: A chessboard with the upper-left square removed. Image from *Proofs* by Jay Cummings.