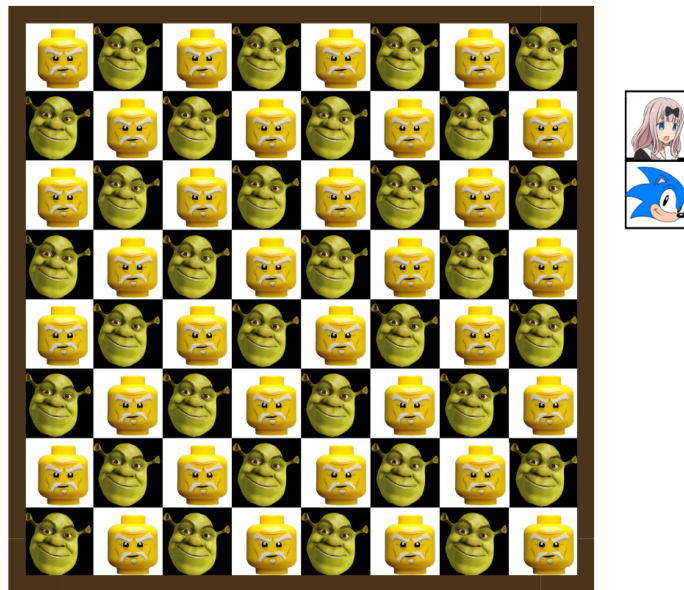# Weekly Challenge 05: Proofs

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CS/MATH 113 Discrete Mathematics
Habib University
Spring 2025

1. **Tiles from Ohio**

   Consider the the WuShrek board below (on left), and the SonicChika tiles next to it (below to the right). A SonicChika tile would cover two squares of a WuShrek board. In all the problems below no two SonicChika tiles can overlap, also you can rotate a tile wherever needed. Imagine you have an arbitrarily large supply of SonicChika tiles. Given a WuShrek board give a formal prove/disprove for the following problems:

   (a) Can you cover all the squares of the WuShrek board by using SonicChika tiles?

   > **Solution:** To prove that

   (b) Suppose we remove the top left square of the WuShrek board. Can you still over all the remaining squares of the WuShrek using the SonicChika tiles?

   (c) Suppose we remove the top left and the bottom left squares of the WuShrek board. Can you still over all the remaining squares of the WuShrek using the SonicChika tiles?

(d) Suppose we remove the top left and the bottom right squares of the WuShrek board. Can you still over all the remaining squares of the WuShrek using the SonicChika tiles?

(e) If we remove a square with Shrek on it and a square with Wu on it from the WuShrek board (they can be any squares not necessarily adjacent), can you still cover all the remaining squares of the WuShrek using the SonicChika tiles?