

HW 5: due Thursday, October 11 in class

1. Show that it's impossible, using 1×2 rectangles, to exactly cover an 8×8 square chessboard from which two opposite corner squares have been removed.
2. Prove or disprove: every tree has at most 1 perfect matching.
3. A *line* of a matrix is a row or column of the matrix. Show that the minimum number of lines containing all the 1's of a $(0,1)$ -matrix is equal to the maximum number of 1's no two of which are in the same line.
4. **Extra credit.** Derive Hall's theorem as a special case of Tutte's theorem.

Remember: midterm in class on October 11th.