Math 9540 — Goddard — Spring25

Assignment 6

Part 1: Write a two-page summary of (the portion of) the paper that your presented in class.

Part 2:

1. Give a formula for the sum of the squares of the eigenvalues of a graph.

2. (a) Define a good drawing of a graph in the plane as one where no two edges interesct more than once. Show that the crossing number of any graph is achieved by a good drawing.
   (b) Show that the crossing number of $K_{2025,2025}$ is even by showing that every good drawing of it has an even number of crossings.

3. Show that the crossing number of $K_3 \square C_n$ is at most n for all $n \geq 3$.

Due: Tuesday April 22