The assignment concerns the paper Graph minors. IX. Disjoint crossed paths (available for free download). Several definitions (society, its segregation and arrangement, transactions, linear decomposition of bounded depth) that we will need in the next lecture are introduced in this paper, in sections 1, 8, and 11.

Section 2 proves the following important basic result (without actually stating it): An internally 4-connected society (G, Ω) with no cross is rural (i.e., G is planar with the vertices of Ω drawn in order in the boundary of the outer face).

Sections 3-5 develop technical tools towards the proof of (6.1), they can be skipped, together with the proof of (6.1). The statement of (6.1) is important and it is explained in section 1: an internally 4-connected society either has a crooked transaction of large order, or can be decomposed into a planar part surrounding a part with no large transaction.

The rest of the paper refines this result:

- Section 7: How do crooked transactions of large order look like?

- Section 8: How do societies without large transactions look like?

- Section 11: What if the society is not internally 4-connected? Skip the proofs, only the statement of (11.11) is important.

Write and send me a short summary of what you read.