Bartosz Antczak

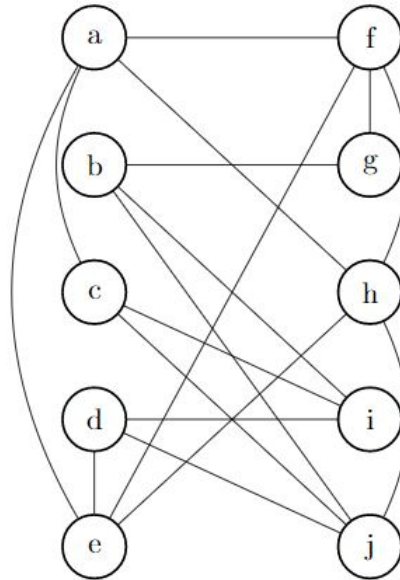**Kuratowski's Theorem**

A graph G is not planar $\iff$ it has a subgraph that is a subdivision of either K_5 (the pentagram) or $K_{3,3}$

We'll be looking at problem set 7.6 in the course notes:

Problem 1(d)

Prove whether or not this graph is planar: There is no algorithm to determine this efficiently. We just have

to play around with it. To prove that it's planar, we must show a planar embedding. If it's not planar, show that there exists a subdivision of either K_5 or $K_{3,3}$.

In this case, this graph is *not* planar.

Problem 8

Consider the prime graph B_n, where the vertices of B_n are $\{1, \cdots, n\}$, and there is an edge uv if and only if $u + v$ is prime.

   a) Prove that B_8 is planar