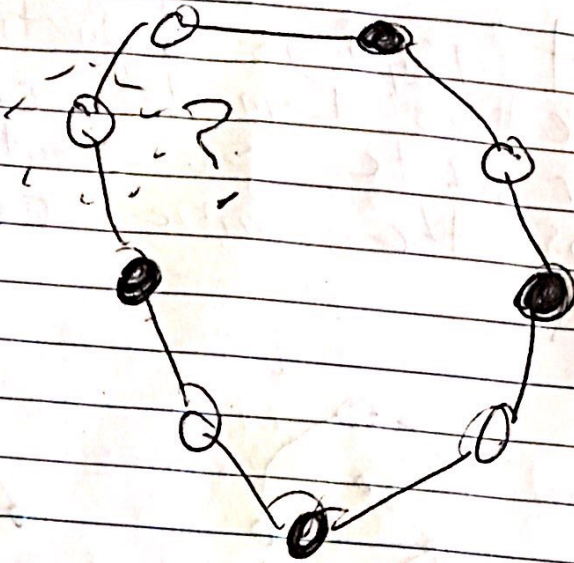


C_6

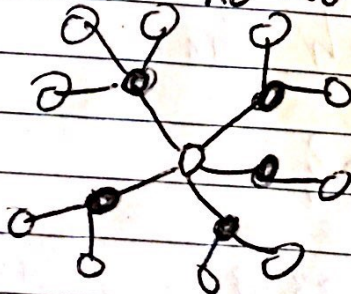


C_9

Claim: A graph is bipartite if and only if it does not contain any odd length cycles.

Sketch Proof

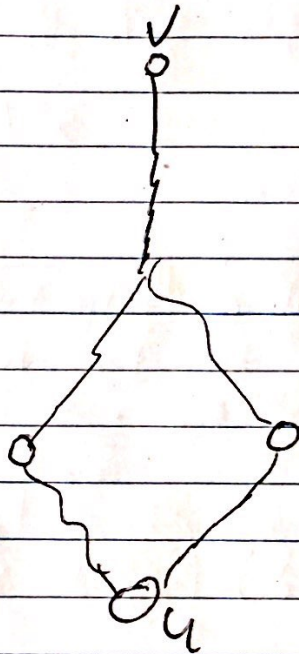
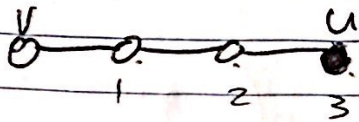
Assume I have no odd length cycles



~~QED~~ -

Pick a start vertex v and color it white.

For any vertex u color u black if u is an odd # of steps from v . Color white if it is an even # of steps from v .



main idea because of no odd cycles
any path v to u will have the same
parity (i.e. even/odd)

