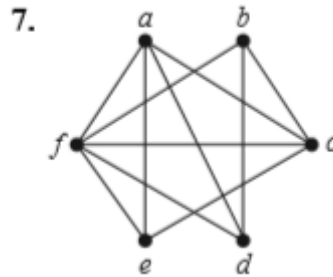
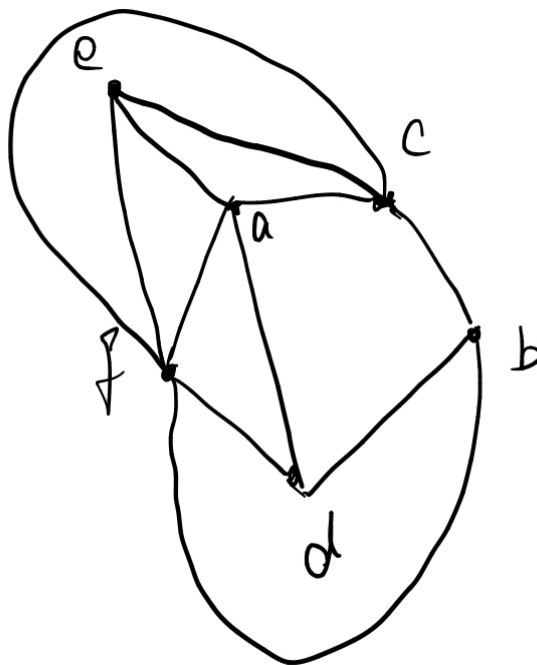


Sec 10.7

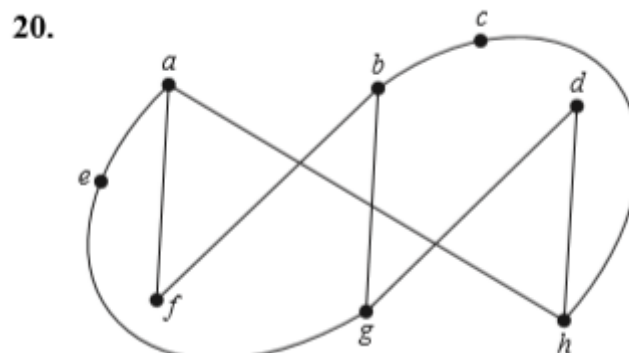
7. determine whether the given graph is planar. If so, draw it so that no edges cross.



Yes.



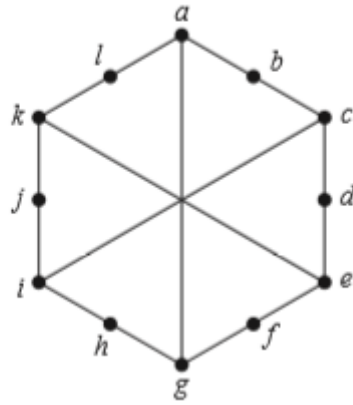
20. determine whether the given graph is homeomorphic to $K_{3,3}$.



No, the f and d only has two degree.

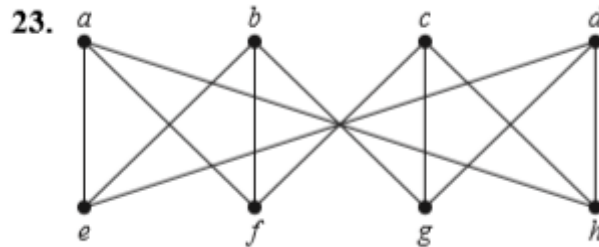
22. determine whether the given graph is homeomorphic to $K_{3,3}$.

22.

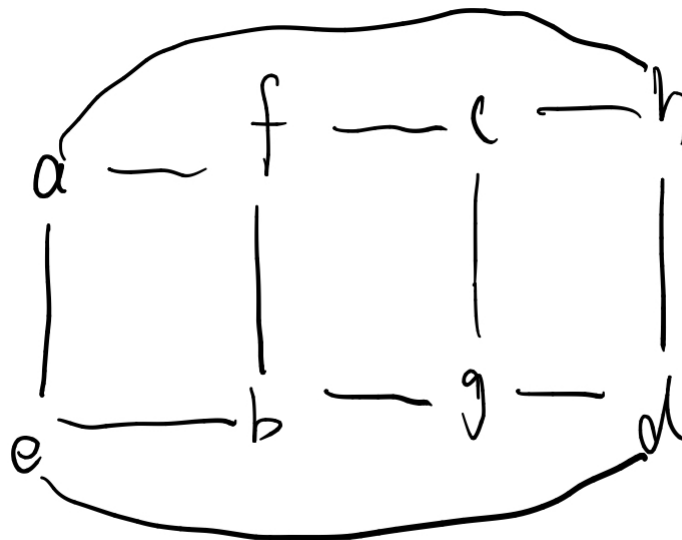


Yes. The two parts will be $\{a, e, i\}$ and $\{c, k, g\}$.

23. use Kuratowski's theorem to determine whether the given graph is planar.

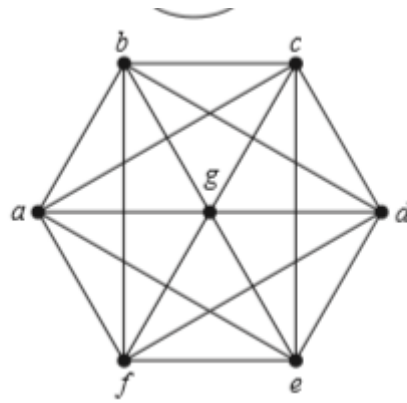


planar.



25. use Kuratowski's theorem to determine whether the given graph is planar.

25.



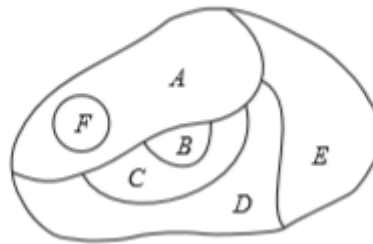
not planar.

delete vertices g and delete c and all its edges. Now the graph is homeomorphic to K_5 .

Sec 10.8

3. construct the dual graph for the map shown. Then find the number of colors needed to color the map so that no two adjacent regions have the same color.

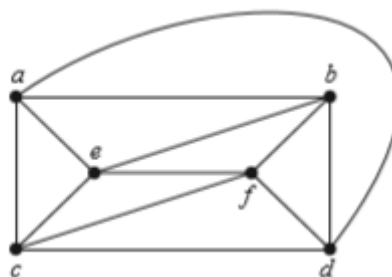
3.



3 colors. The group is $\{A\}\{B,F,D\}\{C,E\}$

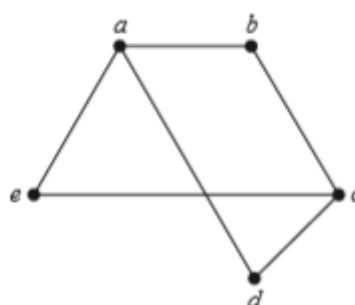
8. find the chromatic number of the given graph.

8.



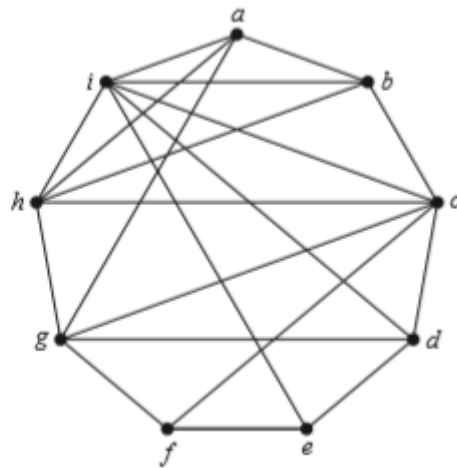
3 $\{a,f\}, \{b,c\}, \{d,e\}$

9.



2 {a,c},{b,d,e}

10.



4 {i,g} {a,c,e,h} {b,d,f} {h}

17. Schedule the final exams for Math 115, Math 116, Math 185, Math 195, CS 101, CS 102, CS 273, and CS 473, using the fewest number of different time slots, if there are no students taking both Math 115 and CS 473, both Math 116 and CS 473, both Math 195 and CS 101, both Math 195 and CS 102, both Math 115 and Math 116, both Math 115 and Math 185, and both Math 185 and Math 195, but there are students in every other pair of courses.

4 time slots is enough.

{115,116,473}{185,195}{102}{273,101}