Exercise 3:
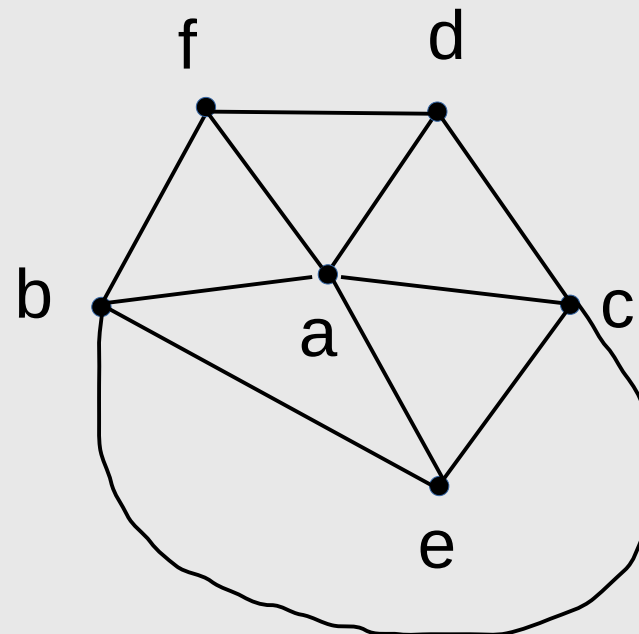Determine whether each graph is planar. If so, draw it so that no edges cross.
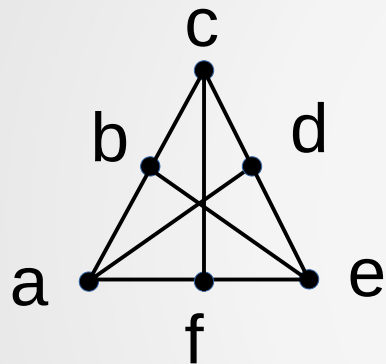
This is not a planar graph.
Even though the inequality
$m \leq 3n-6$ is true ($9 \leq 3 \cdot 6 - 6$), we cannot find a planar representation for this graph via trial and error.
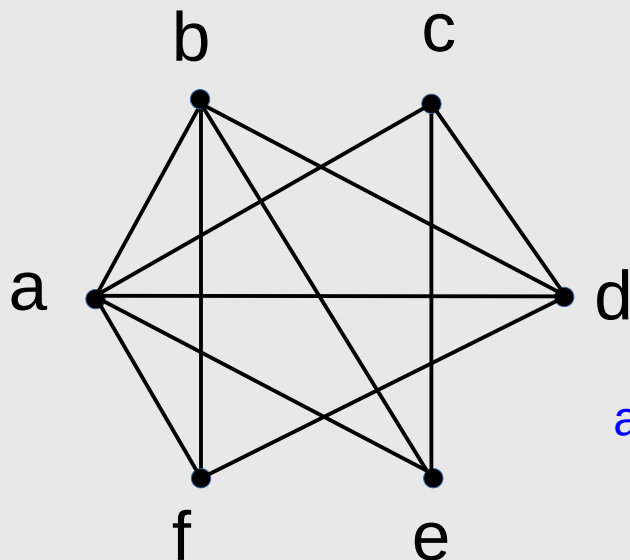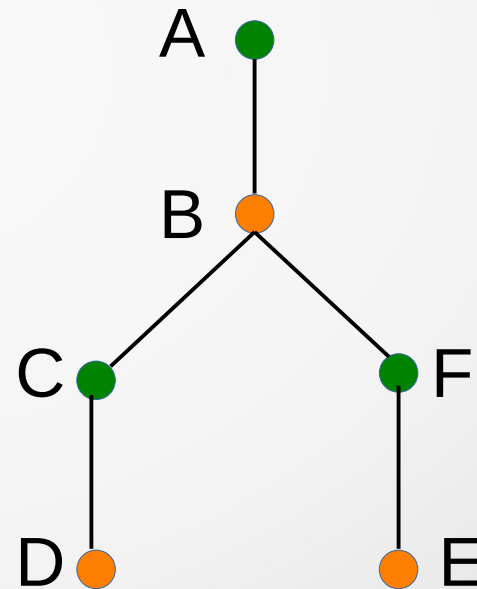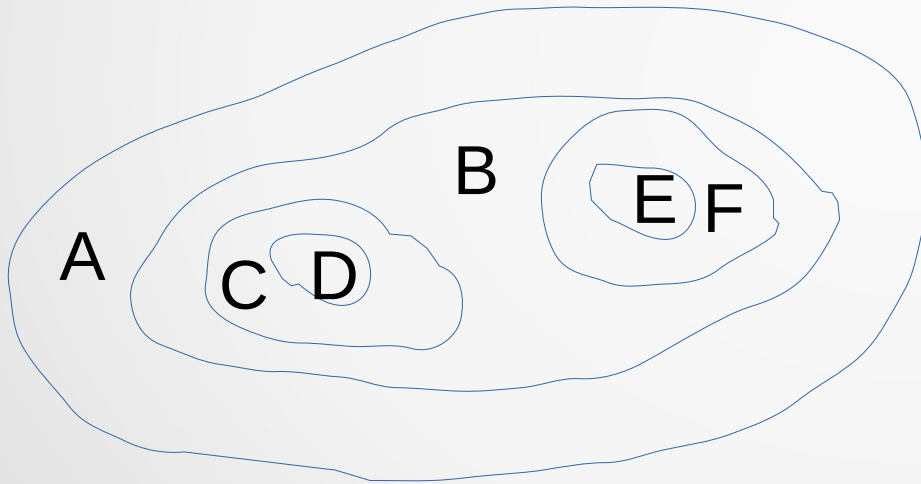
a planar graph.

Exercise 4:

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.
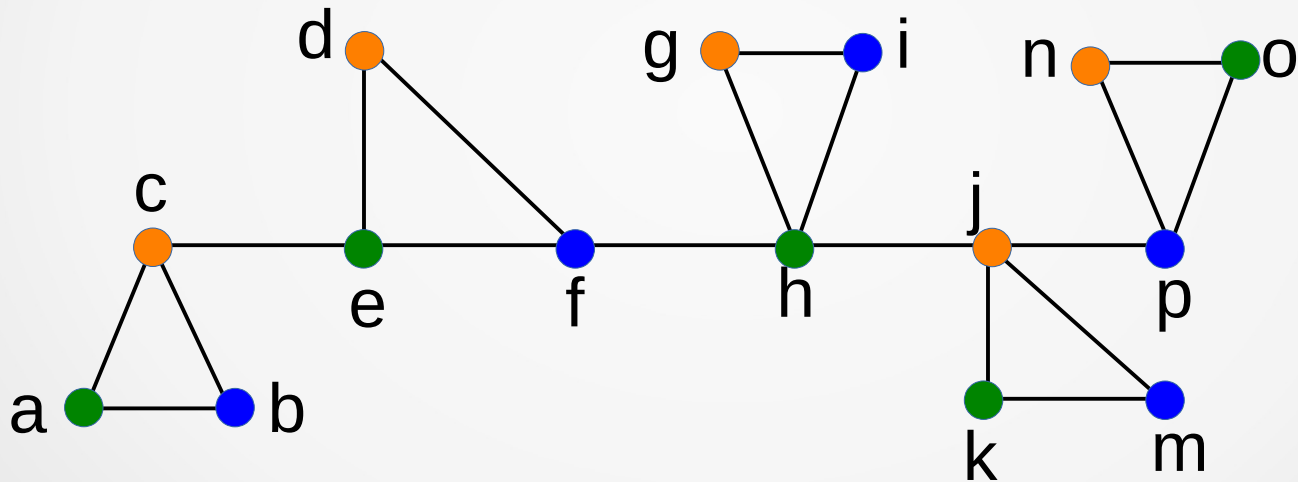

2 colors are needed, $\chi(G) = 2$

Exercise 5:
Find the chromatic number of the given graph

3 colors are needed, $\chi(G) = 3$

Exercise 6:

How many different channels are needed for six stations located at the distances shown in the table, if two stations cannot use the same channel when they are within 150 miles of each other?

	1	2	3	4	5	6
1	---	85	175	200	50	100
2	85	---	125	175	100	160
3	175	125	---	100	200	250
4	200	175	100	---	210	220
5	50	100	200	210	---	100
6	100	160	250	220	100	---

3 different channels are needed