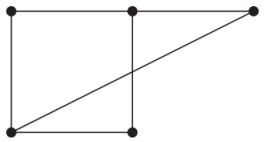
Exercise Sheet 19

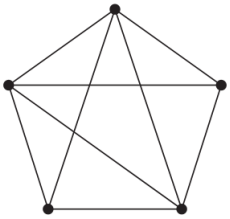
Discrete Mathematics, 2020.12.8

1. ([R], Page 725, Exercise 2, 4) In Exercises 2–4 draw the given planar graph without any crossings.

2.



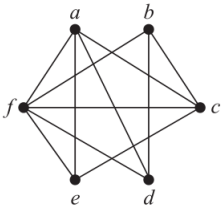
4.



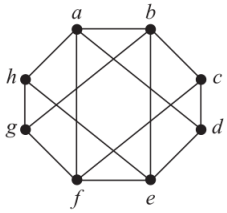
2. ([R], Page 726, Exercise 17) Suppose that a connected planar simple graph with e edges and v vertices contains no simple circuits of length 4 or less. Show that $e \leq (5/3)v - (10/3)$ if $v \geq 4$

3. ([R], Page 725, Exercise 7, 8, 9,Page 726, Exercise 23, 25) Judge whether the following simple graphs are planar or not:
If the graph is planar, present a planar drawing of the graph. Otherwise, use Kuratowski' s Theorem to prove that it is not planar.

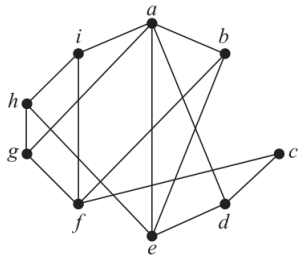
7.



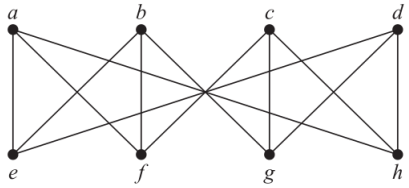
8.



9.



23.



25.