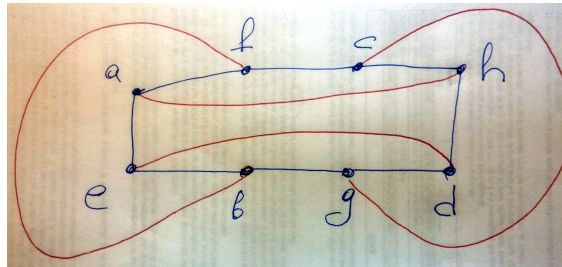


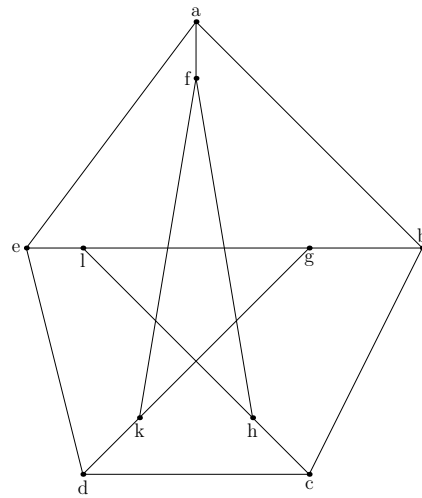
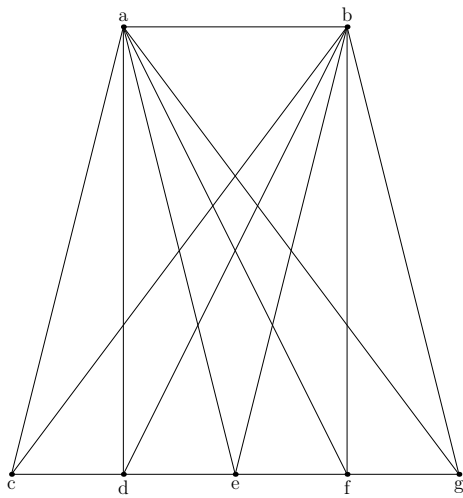
**Graph Theory and Combinatorics MATH-42021/52021.**  
**Home Work 2, due on Saturday, July 16**  
**Instructor: Prof. Artem Zvavitch**  
**13 points (yes, 3 extra points!)**

**Problem 1.** Determine whether the following graph is bipartite. If so, give the partition into the left and right vertices.



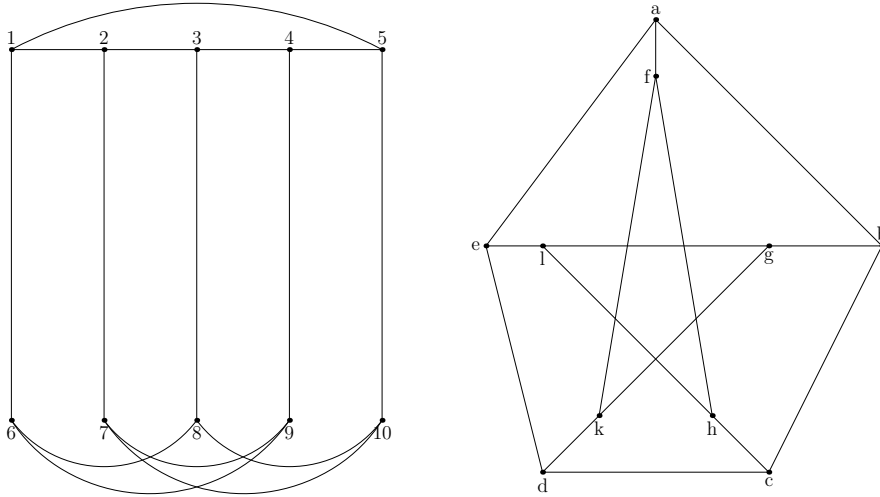
**Problem 2.** If a graph  $G$  has  $v$  vertices, all of which but one have odd degree, how many vertices of odd degree are there in  $\overline{G}$ , the compliment of  $G$ ?

**Problem 3.** Please, decide if the following two graphs are planar or not.



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**Problem 4.** Please, decide if the following two graphs are isomorphic or not.



**Problem 5.** Please, decide if the following graph is planar or not.

