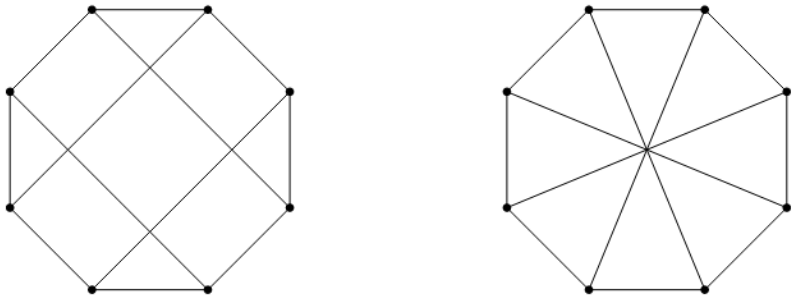
Extra Exersises 1

1. Provide the following definitions for a graph $G = (V, E)$:

   (a) Two nodes $u, v \in G$ are adjacent if ...
   (b) The neighbourhod $N(v)$ of a node $v \in G$ is defined by ...
   (c) Two edges $e_1, e_2 \in E$ are called parallel if ...
   (d) A simple graph is ....
   (e) A graph invariant is ...

2. Show that being bipartite is a graph invariant. (Let G and H be isomorphic graphs, and suppose G is bipartite. Then show that H is also bipartite.)

3. Use the previous problem to show that the following graphs are not isomorphic:



4. Provide two obvious indicators that two graphs G, H are not isomorph.

5. Draw the following graphs:

   (a) $2K_4$
   (b) $K_{1,5}$
   (c) $K_{4,4}$
   (d) P_5
   (e) C_7
   (f) K_6