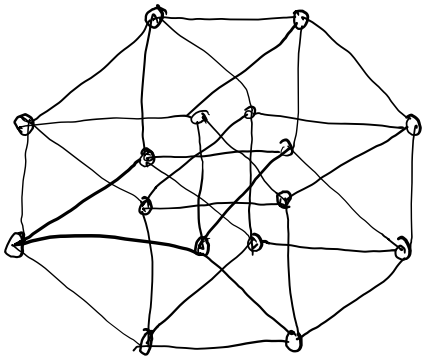
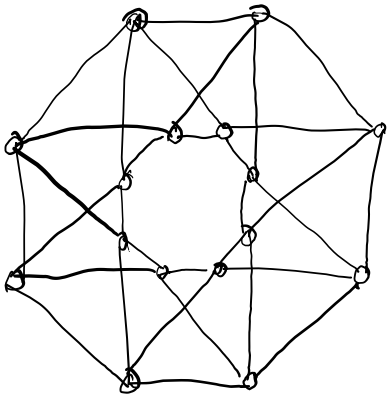
MA859: Selected Topics in Graph Theory
Assignment 1

Date: 24/02/2021 **Maximum Marks: 20**

1. Construct a self complementary graph on 4n or 4n+1 vertices, for any given positive integer n. Describe the procedure step-by-step.
2. Show that a graph is connected if and only if for every partition of its vertices into two non-empty sets, there exists an edge with its end vertices in both the partitions.
3. If u and v are distinct vertices of a graph G, then show that every u-v walk in G contains a u-v path.
4. Determine whether the following graphs are isomorphic:





Justify your answer.