**Graph Theory – Tutorial Sheet**

*(Version 1 December 2013)*

**Question 1:** Draw a graph with degree sequence ***4,3,2,2.*** If it is not possible to draw this graph, explain why.

**Question 2:**Draw a graph with degree sequence ***4,3,3,2,2.*** If it is not possible to draw this graph, explain why.

**Question 3:** Explain what is mean by a ***complete graph***. How is a complete graph, with ***n*** vertices denoted?

**Question 4**: How many edges does a complete graph with 8 vertices contain?

**Question 5:** Draw a 4-regular graph with 8 vertices.

**Question 6:** Is it possible to construct an 8 vertex graph where each vertex is connected to exactly 5 vertices? Is it possible to do so for a 9 vertex graph?

**Question 7:** Consider a d-regular graph on 7 vertices. What are the possible values for d. For each viable value for d, how many edges would there be?

**Question 8:** Consider the pair of graphs below. Are these graphs isomorphic? Justify your answer.

