

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 meant 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.

