The University of Newcastle
School of Information and Physical Sciences

COMP2230/6230 Algorithms

Tutorial Week 11

14 - 15 October 2021

Tutorial

1. Prove that the planar graph 3-colourability is NP-complete.

2. Prove that the 3-clolourability of a graph with no vertex degree exceeding 4 is NP-complete.

More Exercises

3. Design a polynomial time algorithm for 2SAT, or prove that 2SAT is NP-complete.

4. Show that deciding whether a graph is k-colourable is NP-complete for any fixed $k \geq 3$ by giving a reduction from 3-colourability.

5. Show that testing whether a graph G is a subgraph of graph H is NP-complete.