- This homework set has *three* questions, each one with increasing difficulty. You must work in pairs to determine the solutions.
- Every member of the team must be able to explain how you arrived at the answer.
- You may be asked to present your answer on the blackboard.

1. A oriented complete graph is called a tournament. Show that every tournament contains a (directed) Hamilton path.
2. Show that every uniquely 3-edge-colourable cubic graph is hamiltonian. ('Unique' means that all 3-edge-colorings induce the same edge partition.).
3. (*)Prove or disprove the following strengthening of Proposition 10.1.2: 'Every k-connected graph G with $|G| \geq 3$ and $\chi(G) \geq |G|/k$ has a Hamilton cycle'.