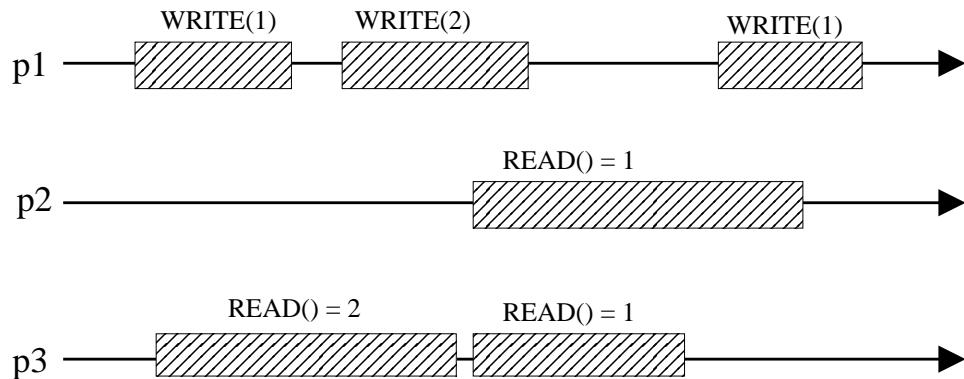
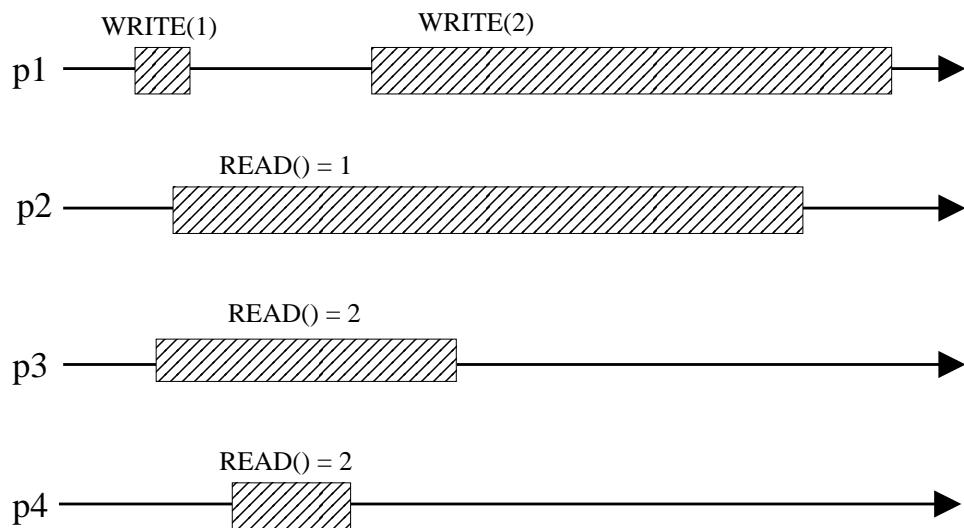


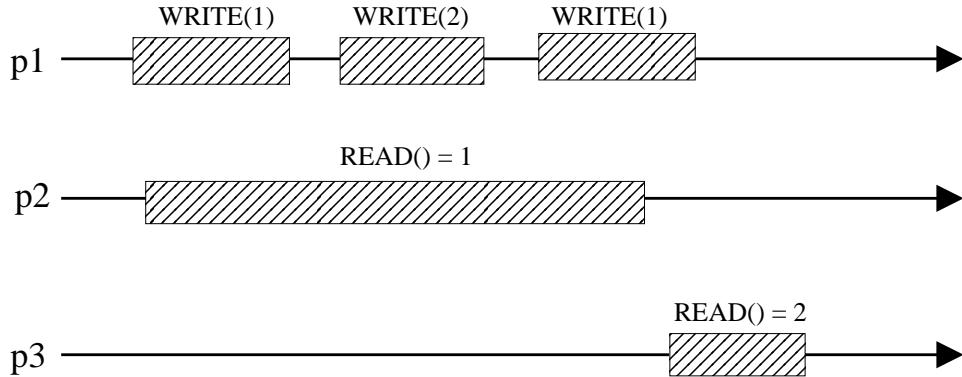
Exercise 1

Problem 1. Each of the following executions represents a run of an algorithm that implements a read/write register. For each execution:

- Specify whether the execution is: *atomic*, *regular*, *safe*, or *none-of-the-above*. Explain why this is the case.
- If the execution is atomic, draw in the serialization points.

Part 1.a.**Part 1.b.**

Part 1.c.



Problem 2. Consider the transformation from (binary) SRSW safe to (binary) MRSW safe registers given in class. Prove that the transformation works for multi-valued registers and regular registers. Also, prove that the transformation does not work for atomic registers (by providing a counterexample that breaks atomicity).

Problem 3. Consider the transformation from binary MRSW safe registers to binary MRSW regular registers, given in class. Prove that the transformation does **not** generate multi-valued MRSW regular registers (by providing a counterexample that breaks regularity). Also, prove that the resulting registers are not binary atomic (by providing a counterexample that breaks atomicity).