6.895 Theory of Parallel Systems Due: Wednesday, October 15th

Problems 4–6

Problem 4. Draw the smallest graph (vertices plus edges) having one source and one sink such that the graph is not series-parallel. Prove it.

Problem 5. Explain the notion of pseudotransitivity in the Nondeterminator.

Problem 6. Suppose the code for reading a shared location l in the Nondeterminator is changed to the following:

`read` a shared location l by procedure F:
    if FIND-SET($writer(l)$) is a P-bag
        then a determinacy race exists
    $reader(l) \leftarrow F$

Are the errors made by this incorrect code false positives or false negatives? Give a simple example of what can go wrong.