III. Design a $P$ time algorithm for the following problem.
Given a digraph $G$ and a vertex $u$, are there paths from $u$ to every vertex of $G$, and paths from every vertex of $G$ to $u$?

IV. Problem Set 7, Problem I (page 145): 4, 6, 8.

V. Problem Set 7, Problem II: 1, 5.