Assignment 2

Available Since: April 27, 2011  Due Date: May 4, 2011, 2:30 p.m.
You are permitted and encouraged to work in groups of two.

Exercise 1: 4 Points
Develop a linear-time algorithm that constructs an inclusion representation for an acyclic graph.

Exercise 2: 4 Points

(a) Show that the structure of a binary tree is uniquely determined by its pre- and inorder numbers.

(b) Is the structure of a binary tree also determined by its pre- and postorder numbers?

Exercise 3: 4 Points
Let $T$ be a rooted tree with $n$ leaves and the property that any vertex is either a leaf or has at least two children.

(a) Give a possibly tight bound for the number of vertices of $T$.

(b) Give a possibly tight bound for the height of $T$. 