Reading
Chapter 8 and Chapter 10, sections 1, 2, and 3, of K &T.

Problem Set
1. (10 points) Exercise 21, pp. 516–517.
2. (10 points) Exercise 27, pp. 518–519.
4. (10 points) Exercise 1, p. 594 of K & T.
5. (10 points) Exercise 5, p. 597 of K & T.
6. (10 points) A plane embedding of an undirected graph $G$ is drawing of $G$ on the plane in such a way that its edges intersect only at their endpoints. Note that not all graphs have plane embeddings; those that do are called planar. For example, trees and triangulated cycles are planar.

A Halin graph is a planar graph constructed from a plane embedding of a tree with at least four vertices and with no vertices of degree 2, by connecting all the leaves of the tree (the vertices of degree 1) with a cycle that passes around the tree in the natural cyclic order defined by the embedding of the tree (see Figure 1).

Prove that every Halin graph has treewidth at most 3.

Note. We reserve the right to grade only a subset of the problems assigned. Which problems will be graded will be decided after the submission deadline.
Figure 1: A Halin graph.