The Theory of Computation
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Solution Manual
Chapter 2, Problem 2.23

In Exercise 2.1, we proved several useful statements about a tree, ending with the conclusion that a tree on n vertices has exactly $n-1$ edges. That is by itself sufficient to prove both statements made in the exercise at hand: a tree is maximally connected acyclic graph because adding any edge to it induces a cycle, as was proved in Exercise 2.1; and a tree is a minimally connected graph, because any graph with fewer edges is disconnected, as we also proved in Exercise 2.1