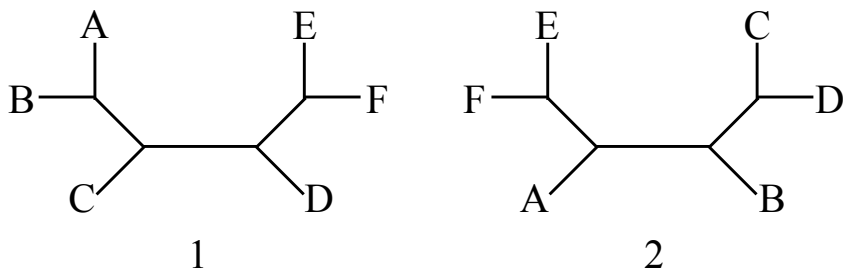


Name(s): _____



- (1) What is the minimal number of subtree pruning-and-regrafting (SPR) operations needed to change tree 1 into tree 2? Describe the required operations.
- (2) What is the minimal number of nearest-neighbor interchanges (NNIs) needed to change tree 1 into tree 2? Describe one such minimal sequence.
- (3) Consider the set of all unrooted trees with five leaves (A , B , C , D , and E). Consider two graphs, in both of which each tree is a vertex. In the first graph, connect any two trees which differ by one SPR operation. In the second graph, connect any two trees which differ by one NNI. Describe these graphs as well as you can.