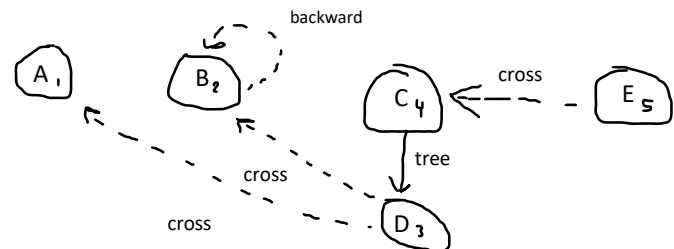
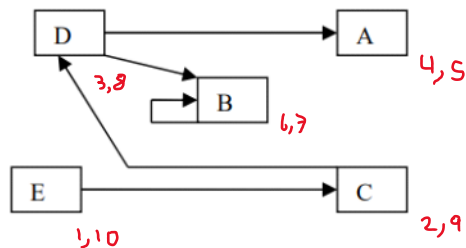


# HW17a - 4.3

Tuesday, March 21, 2023 9:32 PM

<u>Homework</u> <u>17</u>	only problems 2, 4a (For problem 4, only complete part a)	3 Apr 2023
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2. For the graph G below, create the depth first search forest that starts with node A. Whenever there is a choice of which node to visit next, choose the node that comes alphabetically first. Use solid arrows for tree edges; add all other edges as dashed edges. Label all edges as tree, forward, backward, or cross edges. Add postorder numbers as subscripts to each node name.



pre-order: E, C, D, A, B  
post-order: A, B, D, C, E

4. A topological sort of a strict partial ordering R is a total ordering such that x precedes y if  $xRy$ .

a) Do a DFS on graph G (from #2), choosing nodes alphabetically first, to generate a postorder of the vertices, then reverse the postorder. Your answer should be the reversed postorder. Note that the reverse of the postorder is **not** always the same as the preorder.

E, C, D, B, A