L13 PROBLEM 1 (5/5 points)

Second graders are lining up to go to their next class, but must be ordered alphabetically before they can leave. The teacher only swaps the positions of two students that are next to each other in line. Nodes represent permutations of the students in line. Edges connect two permutations if one can be made into the other by swapping two adjacent students.

1. For the next question, consider a line of three students, Alice, Bob, and Carol (denoted A, B, and C).

   When represented as a tree, each node will have how many children?

   2

   2

2. For the next question, consider the general case of our previous problem (permutations of *n* students in a line). Give your answer in terms of *n*.

   When represented as a tree, each node will have how many children?

   n-1

   $n-1$

Reminder: You do not lose points for trying a problem multiple times, nor do you lose points if you hit "Show Answer". If this problem has you stumped after you've tried it a few times, feel free to reveal the solution.

Click the "Reset" button to clear your answers.

Check Show Answer

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