Exercise 3

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Lecture Sequence due Dec 15, 2022 07:30 +08 Completed

Exercise 3

4/4 points (graded)

1. For questions 1 and 2, consider our previous problem (permutations of 3 students in a line).

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

   2 ✔

   2

2. Given two permutations, what is the maximum number of swaps it will take to reach one from the other?

   3 ✔

   3

3. For questions 3 and 4, 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 ✔

   $n-1$

4. Given two permutations, what is the maximum number of swaps it will take to reach one from the other?

   n * (n-1)/2 ✔

   $\frac{n \cdot (n-1)}{2}$

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.

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? Doubt in the last question, there might be spoilers so please be careful. 6

In the last question, I understood why it is (n-1)+(n-2)+(n-3)...+2+1. However, I wanted help to understand how that expression is eq...

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