1. List the members of your group below. Underline your name.

2. Depict the transformations to the following *top-down splay tree* in response to the access pattern 1, 2, 3, 4, 5. Depict all splay operations clearly, including the left and right trees, and highlight the tree after all operations for each insertion have completed.
[additional space for answering the earlier question]
3. Describe, for a beginning programmer, the $k$-way merge-sort algorithm using $2k$ tapes (for $k$ a runtime parameter).

4. Describe, for a beginning programmer, the $k$-way polyphase merge-sort algorithm using $k+1$ tapes (for $k$ a runtime parameter).

5. Refer to Reynolds’s paper\(^1\) on generalized polyphase merging. List the first 20 $k$-generalized Fibonacci numbers for $k = 2, 3, 4, 5$.

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6. Using ideas from Reynolds’s paper on generalized polyphase merging, describe how to determine the initial distribution of sorted runs on tapes for a $k$-way polyphase merge sort. Provide illustrative examples.