Please print out this form (two-sided, if you can) and write your answers *legibly* in the spaces provided. If you can’t write legibly, type.

1. Consider a delete operation in which the deleted node has two children. Let \( x \) be the deleted node and \( y \) be the node that takes its place in the tree. Explain why \( \text{key}(y) > \text{key(left}(y)) \) when the operation completes.

2. Given a node in the binary search tree, describe an algorithm to find the node with the next smaller key.
3. Perform a split at node $b$ in the binary search tree on the left side of Figure 1 of JST20. Show the subtrees $s_1$ and $s_2$ after each step.