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 binary search tree with nodes $a, b, c, d, e, f, g, h, i$, where a is the left child of b, b is the left child of $\underline{c}$, c is the left child of d, and so forth (so, i is the root of the tree). Show the result of doing a splay at node a.

2. For each node in the previous example, write down its depth in the tree, before and after the splay? What is the largest decrease in depth? What is the largest increase? What is the largest depth after the splay?

3. Let u be a node of depth 12 and let v be a node of depth 10 in a self-adjusting search tree. If the nearest common ancestor of u and v has depth 6, give upper and lower bounds on the depth of v following a *find* at u.