Part B

1. What is the minimum number of node in an AVL tree with height of 3, height 5 and height 8? Show the code below and write down the result.

Consider following diagram showing the state of an AVL tree

```
    r
   / \
  l   u
 / \ / \
f n s w
/ \ \ \ \
  e i p z
/ / \ \
 b h j
```
Diagram 1

2. Write the inorder traversal of the tree.

3. List all single lower case letters whose insertion into an AVL Tree represented by Diagram 1 above would require a rebalance of the tree. (Insert a – z in alphabetic order. Remember BST contains no duplicate data).

4. Show how the tree in Diagram 1 is changed when the data element s is removed. Show each state of the tree.

5. What is the worse-case runtime of deleting an element from an AVL tree? What about an unbalanced binary search tree?