3) (5 pts) ALG (AVL Trees)

Suppose we randomly shuffle the six words in the list below and insert them into an AVL tree. (In other words, we insert them in random order – not necessarily the order given – with each of those words ending up in the AVL tree exactly once.)

Fill in the blank next to each word to indicate whether it could **ever** end up at the root of the resulting AVL tree ("yes") or not ("no"). (If you answer "no" for a given word, you are saying it could **never** end up at the root of the resulting AVL tree.)

You may assume the AVL tree is ordered alphabetically. So, all the words in the left subtree of "apple" would have to come before "apple" in alphabetical order, and all the words in its right subtree would have to come after "apple" in alphabetical order.

```
__no___ apple

__yes__ mango

__no___ papaya

__no___ banana

__no__ mulberry

__yes_ blueberry


^
Fill in each blank with "yes" or "no" to indicate whether the word could
serve as the root of an AVL tree that results from shuffling these six words
and inserting them into an AVL tree in random order.
```

See notes on following page for guidance on how to solve this problem.

Grading for Question #3:

Subtract 1 point for each incorrect answer (including any spaces that were left blank), for a minimum score of 0 points.

(So, if they got 5 blanks right and 1 blank wrong, that's -1, for a total of 4/5 on this question. If they got 1 blank right and 5 blanks wrong, that's -5, for a final score of 0/5. If they got all 6 blanks wrong, that's also 0/5.)