

3) (10 pts) DSN (Tries)

In many word games, the player is given some tiles with letters and must form a word with those tiles. Given a trie that stores a dictionary of valid words and a frequency array storing information of the tiles a player has, determine the number of unique words she can form with those tiles. Complete the function shown below to solve the given problem. Note: the entry in `freq[i]` represents the number of tiles with the letter `'a' + i`. (**Hint: recursing down the trie is exactly like placing a tile down, which means updating the freq array. When you have finished "trying a tile" you have to put it back into your pool, which means editing the freq array again.**)

```
typedef struct TrieNode {
    struct TrieNode *children[26];
    int flag; // 1 if the string is in the trie, 0 otherwise
} TrieNode;

int countWords(TrieNode* root, int freq[]) {

    int res = _____ ;

    int i;
    for (i=0; i<26; i++) {

        if ( _____ || _____ )
            continue;

        _____ ;

        res += _____ ;

        _____ ;

    }

    return res;
}
```