HW 1: Review python, practice writing header comments and test cases

Problem 1 (5 points)

Write a function that satisfies the following header comments and will pass the following test cases.

#Purpose: Given a dictionary, a word and an amount, if the dictionary contains the word, the number associated with the word in the dictionary is increase by amount. Otherwise word is added to the dictionary associated with the given amount.
#Input: a dictionary mapping strings to numbers, a string word, and a number amount
#Output: None
#Assumptions: the first argument is a dictionary, the last argument is numeric

```
d ={'data':1, 'structures':1000, 'and':15}
update(d, 'data', 1)
print(d) #expect:{'data':2, 'structures':1000, 'and':15}
update(d, 'and', 5)
print(d) #expect:{'data':2, 'structures':1000, 'and':20}
update(d, 'algorithms', 1)
print(d) #expect:{'data':2, 'structures':1000, 'and':20, 'algorithms':1}
update(d, 'algorithms', 4)
print(d) #expect:{'data':2, 'structures':1000, 'and':20, 'algorithms':5}
```

Problem 2 (20 points)

1. Solve the coding bat problems below. For your solution, submit a screen shot of your final solution and the result of running your solution like the one below. (8 pts)
    a) https://codingbat.com/prob/p170842
    b) https://codingbat.com/prob/p119308

2. Write header comments for each coding bat function (6 pts)
3. Write 3 test cases for each coding bat function (6 pts)

Problem 3 (5 points)

Choose one of the coding bat problems above and rewrite the solution using **recursion**. Submit a screen shot showing your recursive code and the results of running your code.