1. Write a function which reverses a string (e.g. "Don't get sick" becomes "kcis teg t'noD").

2. Define a function that takes an input string and rotates the sequence of letters in each word by n. For example: shift_left("DEADBEEF", 3) will produce the output string "DBEEFDEA". You should be able to shift a string by a value greater than the length of the string[1].
   Assume a function len(str) which returns the length of a string is provided

   (a) Design: Give brief description on how your function should accomplish this.

   (b) Testing: Provide 3 test cases, using specific values for the input string and amount of shifting and what the expected output should be for each.

   (c) Implement the function in Python.

   (d) Implement the function `shift_right()`, which rotates letters in the opposite direction.

[1]The % operator, which finds the remainder of a division operation will be useful here.

3. Write a function that takes in a file name, and returns the average size of a word in that file. The files will only have 1 word per line, for example:

No
soup
for
you!

which has an average length of: 3.25
Assume a function len(str) which returns the length of a string is provided

4. Perform a substitution trace on

```
1    reverse('Cinco-fone')
```

5. Write a function that takes in a string representation of a number and returns the sum of all of digits in the string.
   For example sum('11111') returns 5.
   Assume a function len(str) which returns the length of a string is provided.
   assume a function int(str) which, given a string representation of an integer, returns its integer value

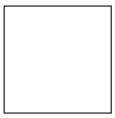
   (a) Recursively.

   (b) Iteratively

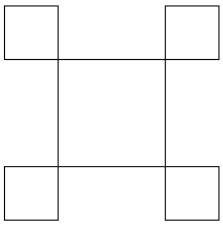
   (c) How would you test this function?

6. Assuming the turtle is facing east, write the python code to draw the following picture given the proper depth as input:

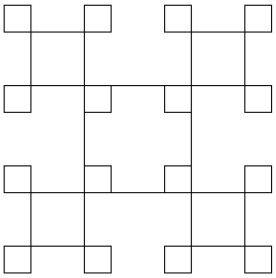
   - depth = 0
     No output
   - depth = 1

   - depth = 2

   - depth = 3

7. What does the following evaluate to?

```
1 def writeThatDown( n ):
2     if n < 5:
3         return n
4     return (2 * n)
5
6 def he( n ):
7     temp = n + 180
8     if temp > 185:
9         return temp
10    return n
11
12 def putstheFernback( n ):
13    return -n
14
15 n = 20
16 n = he(putstheFernback(writeThatDown( n ) ) )
17 print( n )
```

8. Write a function which performs a basic string compression, which uses counts of repeated characters. For example the string *abbbccccaaa* would be compressed to: *a*1*b*3*c*4*a*3. *Assume a function len(str) which returns the length of a string is provided.*
   assume a function int(str) which, given a string representation of an integer, returns its integer value.
   Assume a function str(int) which, given an integer, returns the string representation of this integer, is provided.