Exercise 9.22.6

```
# Exercise_9.22.6


def reverse(astring):
    #print(astring[::-1])


    new_string = ""
    for chr in astring:
        new_string = chr + new_string
    return new_string


thing = input('Type a word or sentence.')
print(reverse(thing))
```

```
Type a word or sentence.apple in a tree
eert a ni elppa
```

Exercise 9.22.14

```
# Exercise_9.22.14


import turtle


def create_system(numIters, axiom):
    startString = axiom
    endString = ""
    for i in range(numIters):
```

```
        endString = process(startString)
        startString = endString

    return endString

def process(oldStr):
    newstr = ""
    for ch in oldStr:
        newstr = newstr + rules(ch)

    return newstr

def rules(ch):
    newstr = ""
    if ch == 'X':
        newstr = 'X+YF+'
    elif ch == 'Y':
        newstr = '-FX-Y'
    else:
        newstr = ch

    return newstr

def draw_system(aTurtle, instructions, angle, distance):
    for let in instructions:
        if let == 'F':
            aTurtle.forward(distance)
        elif let == 'B':
            aTurtle.backward(distance)
```

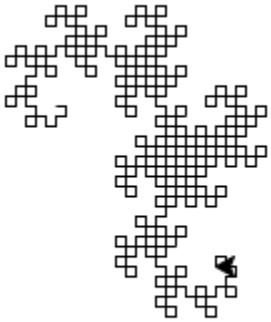
```
    elif let == '+':
        aTurtle.right(angle)
    elif let == '-':
        aTurtle.left(angle)



inst = create_system(9, "FX")
print(inst)
t = turtle.Turtle()
wn = turtle.Screen()

t.speed(9)
draw_system(t, inst, 90, 5)

wn.exitonclick()
```



Exercise 10.30.4

```
# Exercise_10.30.4

import random


def average(l):
    avr = sum(l)/len(l)
    return avr




the_list = []

iter = 0

while iter < 100:
    iter = iter +1
    number = random.randint(0,1001)
    the_list.append(number)


#print(the_list)            ///testing///


print(average(the_list))
```

(Printed the list with the average, this is with only 10 integers)

```
[253, 699, 87, 906, 602, 993, 801, 616, 177, 664]
579.8
```

(Printed the list, the average is on the bottom line. This is the result of the actual exercise, with 100 random integers)

Sophia Miles

```
[892, 281, 669, 289, 447, 921, 939, 998, 795, 515, 203, 703, 702, 467, 715, 940,
 862, 117, 572, 759, 628, 460, 275, 889, 411, 832, 289, 698, 881, 212, 524, 557,
 355, 504, 252, 990, 523, 66, 366, 72, 181, 403, 767, 960, 597, 945, 707, 47, 45
0, 916, 950, 204, 831, 141, 1, 720, 498, 6, 487, 898, 628, 520, 529, 925, 757, 3
76, 771, 904, 400, 119, 996, 537, 634, 359, 716, 664, 217, 205, 691, 570, 403, 5
54, 345, 844, 341, 550, 591, 178, 521, 348, 68, 218, 174, 838, 520, 381, 833, 24
6, 105, 178]
530.33
```

Exercise 10.30.6

```
# Exercise_10.30.6


def sum_of_squares(xs):
    new_list = []
    for num in xs:
        if type(num) == int or type(num) == float:
            num = num ** 2
            new_list.append(num)


    return sum(new_list)


the_list = [2, 3, 4]
print(sum_of_squares(the_list))
```

```
= RESTART: /
29
```

(This is the result of the function on the_list in the code)