

1. What is the output of the following code

a. (2 points)

```
def ct1(a):  
  
    if len(a) == 0 or len(a) == 1:  
        return 0  
    print (a)  
    if a[0] == a[1]:  
        return ct1(a[2:])  
    else:  
        return 1+ct1(a[1:])  
  
print (ct1("tools"))
```

b. (3 points)

```
def fRetG(x):  
    print ("fRetG")  
    return x//2  
  
def myFunc(x):  
    print(x)  
    if x < 0:  
        return 0  
    elif x == 1:  
        return 1  
    else:  
        return x + myFunc(x-5)  
  
def ct2(x):  
    print ("ret=",myFunc(fRetG(x)))  
  
ct2(16)
```

2. Write a **recursive** function called equals, that takes two lists as input and returns true if the two lists are the same, otherwise it should return false. You can assume that both lists will always be the same size. You cannot use any lists functions including len. (3 points)

```
def equals(a,b):
```

3. Write a **recursive** function called multiple(a,b), that returns the value a * b. You can only use + and - operators in this function: (2 points)

```
def multiply(a,b):
```