CSC148 Summer 2016 Quiz 05 (15 minutes)

First Name …… Last Name …….. Lab room# ……

Read the code for the recursive function **count_odd**. And answer all 3 questions in this page and in the back.

```
1.  def count_odd(lst):
2.      """
3.      Return the number of odd numbers in <lst>
4.
5.      :param lst: a nested list or int value
6.      :type lst: int | list
7.      :rtype :   int
8.      """
9.      if isinstance (lst, int):
10.         return lst % 2
11.     else:
12.         for element in lst :
13.             return count_odd(element)
```

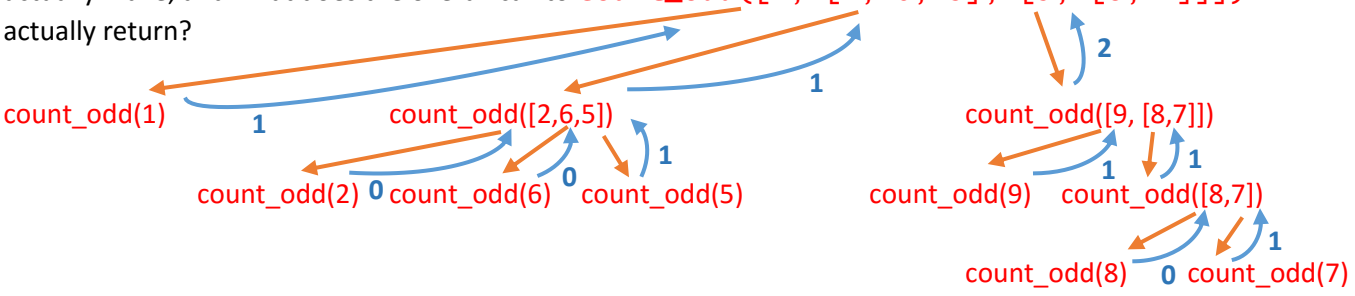
Answer the questions below about the following client code.

```
>>> count_odd([1, [2, 6, 5], [9, [8, 7]]])
```

1. Based on the *structure* of the argument, state the three relevant recursive calls in this case, and what each one *should* return assuming **count_odd** is implemented correctly.

count_odd(1)	should return 1
count_odd([2,6,5])	should return 1
count_odd([9, [8,7]])	should return 2

2. Now, assuming all recursive calls are correct, what recursive call(s) does this implementation of **count_odd** actually make, and what does the overall call to `count_odd([1, [2, 6, 5], [9, [8, 7]]])` actually return?



The overall call should return 4, i.e. sum(**1**, **1**, **2**) or by list comprehension: sum([**1**, **1**, **2**])

3. Write a correct implementation of **`count_odd`**. (You may rewrite just the lines that should be changed.)

Replace Lines 11-13 with the following:

```
11. else:
12.     return sum([count_odd(element) for element in lst])
```