

Python Homework 11

In the following multiple choice questions, please circle the correct output of Python code.

1.

```
num1=3
num2=5
for i in range(0,4):
    num3=num1+num2
    print(num3)
    num1=num2
    num2=num3
```

(a) 8 11 14 17 (b) 8 16 24 32 (c) 8 13 21 34 (d) 8 9 10 11 (e) 8 13 18 23
2.

```
for i in range(0,6,2):
    for j in range(i,6,2):
        print(j)
```

(a) 0 2 4 0 2 4 (b) 0 2 4 2 4 4 (c) 0 2 4 6 4 6 (d) 0 0 0 2 2 4 (e) 0 1 2 3 4 5
3.

```
num=325647102
res=[]
while (num>0):
    num1=num%10
    if (num1%3==0):
        res.insert(0,num1)
    num=num//10
print(res)
```

(a) [3,6,0] (b) [0,6,3] (c) [3,6] (d) [2,0,1,7,4,6,5,2,3] (e) [6,3]
4.

```
nums1=[1,2,3,4]
nums2=[5,6,7,8]
nums3=[]
for i in range(0,len(nums1)):
    nums3.insert(0,nums1[i])
    nums3.append(nums2[i])
print(nums3)
```

(a) [8,4,7,3,6,2,5,1] (b) [1,5,2,6,3,7,4,8] (c) [8,7,6,5,4,3,2,1]
(d) [1,2,3,4,5,6,7,8] (e) [4, 3, 2, 1, 5, 6, 7, 8]
5.

```
nums=[1,2,3,4,5,6,7,8,9]
_____:
```

print(nums[i])

Output of the code is
list index out of range

What is the missing statement?

(a) for i in range(0,len(nums),2):
(b) for i in range(len(nums)-1,1,-3):
(c) for i in range(len(nums),0,-2):
(d) for i in range(len(nums)-1,0,-2):
(e) for i in range(len(nums)-2,0,-2):

Coding question 1:

Make a function which can print out all possible pair of 2 integers that sum of both square is 30005 ($x^2 + y^2 = 30005$). Output should be like this:

38 169

46 167

71 158

106 137

137 106

158 71

167 46

169 38

Coding question 2: Make a function `list_add_up(nums)`, the return value is another new list `res`, which first value `res[0]` is 1, and all other values `res[i]` are sum of 2 values from `nums` (`res[i] = nums[i-1] + nums[i]`). Test with `list_add_up([1,2,1])` and result should be `[1,3,3,1]`. Test with `list_add_up([1,7, 21, 35, 35, 21, 7, 1])` and result should be `[1,8, 28, 56, 70, 56, 28, 8, 1]`.

Coding question 3: Try to print Pascal triangle with above function.

1

1 1

1 2 1

1 3 3 1

1 4 6 4 1

1 5 10 10 5 1

1 6 15 20 15 6 1

1 7 21 35 35 21 7 1

1 8 28 56 70 56 28 8 1

1 9 36 84 126 126 84 36 9 1