Python Homework 3

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

1.
```
for num in range(0,20,2):
    if (num % 3 == 1):
        print(num)
```
(a) 4 16 (b) 4 10 16 (c) 0 6 12 18 (d) 1 4 7 10 13 16 19

(e) 0 2 4 6 8 10 12 14 16 18

2.
```
nums=[]
nums.append(1)
nums.append(2)
nums.append(3)
nums[2]=4
nums.insert(2,5)
nums.append(6))
print(nums)
```
(a) [1,2,3,4,5] (b) [1,2,4,5,6] (c) [1,2,5,4,6] (d) [1,5,2,4,6] (e) [1,5,4,3,6]

3.
```
nums=[1,3,5,7,9]
sum = 0
for i in range(0, len(nums),2):
    if (nums[i] % 3 == 0):
        sum = sum + nums[i]
print(sum)
```
(a) 6 (b) 12 (c) 8 (d) 9 (e) 10

4.
```
nums = [4,4,6,2,3,3,6]
for i in range(1, len(nums), 1):
    if (nums[i] == nums[i-1]):
        nums[i] = 2*nums[i]
        nums[i-1]=0
print(nums)
```
(a) [0,8,6,2,0,6,6] (b) [4,4,6,2,3,3,6] (c) [0,8,6,2,0,0,12]

(d) [8,0,6,2,12,0,0] (e) [8,0,6,2,6,6,0]

5.
```
nums1 = [1,2,3,4,5]
nums2 = [5,4,3,2,1]
count = 0
for i in range(0, len(nums1)):
    if (nums1[i] > nums2[i]):
        count = count + 1
print(count)
```
(a) 1 (b) 2 (c) 3 (d) 4 (e) 5

Coding question 1: Make a function find_idx(nums, num). Here nums is a list, and num is an integer. If there is num in nums, return the index of num in nums. Otherwise return -1. Test with find_idx([1,2,3,4,5], 3), result should be 2. Test with find_idx([1,2,3,4,5], 6), result should be -1.

Coding question 2: Using above function, make another function get_common(nums1, nums2). Here both nums1 and nums2 are lists. The return value is another list which has all values that in both lists. Test with get_common([1,2,3,5,6], [2,4,6,7,8]) and result should be [2,6].

Coding question 2: Make function remove_common(nums1, nums2). Here both nums1 and nums2 are lists. The return value is another list which has all values that in nums1 but not in nums2. Test with get_common([1,2,3,5,6], [2,4,6,7,8]) and result should be [1,3,5].