Python Homework 4

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

1. for num1 in range(0,5,2): 0 2 4
   for num2 in range(num1, 4, 1):
   print(num2)
   (a) 0 1 2 1 2 3 (b) 1 2 3 2 3 4 (c) 0 2 4 2 4 (d) 0 1 2 3 2 3 (e) 0 2 4 2 4
2. nums=[]
   nums.append(1)
   nums.append(3)
   nums.append(5)
   nums[2]=4
   nums.insert(2,5)
   del nums[0]
   print(nums)
   (a) [1,2,3,4,5] (b) [3,5,4] (c) [1,2,3] (d) [5,4,3,5] (e) [3,4,5]
3. nums=[1,3,5,7,9,11,13,15,17,19,21]
   sum = 0
   for i in range(0, len(nums),2):
   if (i % 3 == 1):
   sum = sum + nums[i]
   print(sum)
   (a) 16 (b) 8 (c) 20 (d) 9 (e) 30
4. nums = [4,4,6,2,3,3,6,8,2,6,3]
   for i in range(0, len(nums), 1):
   if (i < len(nums) and nums[i] > 3):
   del nums[i]
   print(nums)
   (a) [2,3,3,2,3] (b) [4,2,3,3,8,2,3] (c) [2,2] (d) [4,4,6,6,8,6]
   (e) [4,6,6,2,3,6,8,6]
5. nums1 = [1,2,3,4,5]
   nums2 = [5,4,3,2,1]
   for i in range(0, len(nums1)):
   if (nums1[i] > nums2[i]):
   nums2[i] = 0
   else:
   nums1[i] = 0
   print(nums1)
   (a) [0,0,0,4,5] (b) [1,2,0,0,0] (c) [0,0,3,4,5] (d) [1,2,3,0,0] (e) [1,2,0,4,5]

Coding question 1:

Please make a function reverse_digit(num) which should return another number with all digits reverted. For example, with reverse_digit(12345), return value should be 54321.

Coding question 2:

Please make a function is_prime(num) which should return True if num is prime, or False if num is composite.

Coding question 3:

There is a famous Goldbach's conjecture: any even number can be written as sum of 2 prime numbers. Please make a function check_goldbach(num) which can return 2 prime numbers which sum is num. For example, with check_goldbach(20) which can return 3,17, or it is also acceptable if return 7,13.