**Practice Problems for Lists Solutions**

1. Given the statements

lst = [3, 0, 1, 5, 2]

x = 2

evaluate the following expressions:

(a) lst[0]? **3**

(b) lst[3]? **5**

(c) lst[x]? **1**

(d) lst[-x]? **5**

(e) lst[x + 1]? **5**

(f) lst[x] + 1? **2**

(g) lst[lst[x]]? **0**

(h) lst[lst[lst[x]]]? **3**

1. Provide list comprehension for each of the following lists
2. [0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1]

**[x/10 for x in range(1,11)]**

1. [(‘a’, 3), (‘a’, 4), (‘b’, 3), (‘b’, 4)]

**[(x, y) for x in (‘a’, ‘b’) for y in (3, 4)]**

1. Assume the lists **numbers1** has 100 elements and **numbers2** is an empty list. Write

code that copies the values in numbers1 to numbers2. Hint: use one of the list methods we have discussed.

**numbers2 = numbers1.copy()**

1. Write a Python program to find the of words that are longer than **n** from a given list of words. Assume that the user will provide the list as a string of words separated by space.

**my\_list = input('Enter your list of words: ').split(' ')**

**out\_list = []**

**n = int(input('Enter the max length: '))**

**for word in my\_list:**

**if len(word) > n:**

**out\_list.append(word)**

**print(out\_list)**

1. Write the list represented by each of the following expressions.

(a) [8] \* 4 **→** **[8, 8, 8, 8]**

(b) 3 \* [2, 7] **→ [2, 7, 2, 7, 2, 7]**

(c) [1, 2, 3] + ['a', 'b', 'c', 'd'] **→ [1, 2, 3, ‘a’, ‘b’, ‘c’, ‘d’]**

1. Write the list represented by each of the following list comprehension expressions
2. [10\*x for x in range(5, 10)] **→** **[50, 60, 70, 80, 90]**
3. [x for x in range(10, 21) if x % 3 == 0] **→ [ 12, 15, 18]**
4. [(x, y) for x in range(2) for y in range(3)] **→**

**[(0,0), (0,1), (0,2), (1,0),(1,1),(1,2)]**

1. Complete the following function that adds up all the positive values in a list of integers. For example, if list a contains the elements 3,−3,5,2,−1, and 2, the call sum\_positive(a) would evaluate to 12, since 3 + 5 + 2 + 2 = 12. The function returns zero if the list is empty.

**def sum\_positive(a):**

**return sum([x for x in a if x > 0])**