1.

(a) For an object to be used as a dictionary key it must be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(b) Could t = (2,[3,4],4) be used as a dictionary key? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. (a) Using the lists [2,6,10,1],['a', 'b', 'c', 'd'], the zip function and the dict() conversion function, write a single line that constructs the dictionary shown in the output.

>>> \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

{2:'a', 6:'b', 10:'c', 1:'d'}   
  
(b) Complete the code below for constructing a string representation of a list of values. If L is [‘hello’], it returns the string ‘hello’. If L = [‘hello’,’goodbye’], it returns the string ‘hello and goodbye’. If L = [‘hello’,’aloha’,’goodbye’] it returns the string ‘hello, aloha and goodbye’.

def list2string(L):

3. A “likes file” is a file containing lines that consist of a person’s name and the name of an item that that person likes, separated by a space. Each name can appear in multiple lines. You are to write a function that returns a dictionary with keys the unique names that appear in the file and with the value for a given name a list of the items that that person likes. For example, if the file contains the following lines:

Jon apples  
Jon pears  
Joe cheddar  
jon brie  
joe limburger

Then your function would return   
{'Joe': ['pears', 'limburger'], 'Jon': ['pears', 'apples', 'brie']}

def makeLikesDictionary(f):  
 '''f has been opened for reading a likes file and the corresponding likes   
dictionary is returned'''

4. Write a list comprehension that constructs a list of the squares of odd integers less than a given integer n.  
  
OddsSquared =

If n is very large, the above list could require a lot of storage. If your goal was to use the list in a for-loop, what should you use instead of a list comprehension? Show the construction below.

5. Suppose you have a list L of 2-tuples. Write a single statement to sort L in increasing tuple sums. For example, if   
L = [(1,4), (0,1), (1,-1), (3,1)], then after sorting, the list would be [(-1,1), (0,1), (3,1), (1,4)]

L.sort( )

6. You are to write a function that constructs a list of integers contained in a text file with name *fname*. Ideally, the file should exist and contain digit strings separated by white space. But this may not be the case and your code segment should take this into account. If errors occur, your function should print the corresponding error message and return None. Otherwise, it returns the integer list. And no matter what occurs, any opened file should be closed. Your code should use a try-except-finally block and may require more than one Exception possibility. Hint: if you are going to use f for the file object, set it to None before attempting to open the file.

def getIntList(fname: