Here are a few comments on the Lab Assignment 11b activities.

Part (a)

- Keep it simple
    - Send the four parameter values to the function
        - Don't worry about units – assume they are all the same
    - Check that radius is small enough to fit on the face length X width
        - If not, return an error
            - Could be something like the integer -999 so that the calling code will recognize that this is not a valid volume
    - If the radius is small enough, calculate the volume remaining and return it
- In the file that you submit, demonstrate the function
    - Create variables for the four values
    - Call the function
    - Catch the return value in a variable
    - Print the result

Part (b)

"Three parallel lists" means that there are three Python lists, each with a different name, such that elements in the same position correspond with each other. For example, for the following data,

Facility Name	Annual Operating Cost (millions)	Annual Value of Products (millions)
ABC Corporation	75.1	135.7
General Manufacturing	103.8	200.1
Specialty Products	99.2	188.3

define three Python lists as follows:

```
facilityName = [ 'ABC Corporation', 'General Manufacturing', 'Specialty Products']
annualCost = [75.1, 103.8, 99.2]
annualValue = [135.7, 200.1, 188.3]
```

Now, if you create a loop for the list index, element[0] in each list corresponds to ABC Corporation, and element[1] in each list corresponds to General Manufacturing.

"Profitability" is the difference between "value" and "cost".

Part (c)

This is pretty straightforward. You are writing a function to print mailing labels. The only trick is that sometimes the address needs just one line and sometimes it needs two. Your function should recognize how many lines are required and print accordingly. There are lots of clever ways to accomplish this, so I'll let you try to figure this out before giving too much away.

Note: As a general rule, I do not recommend getting input from the keyboard inside a function nor do I recommend printing from within a function. It is usually better to put all the input in the same place and all the output in the same place for debugging purposes. Having said that, this function only exists to print something in a specified format, so it is reasonable to print from the function. However, you should pass the required info to the function as parameters – don't get keyboard input from within the function.

Part (d)

Not much to say here. In your file, hard code a Python list with several float values. Then call your function by passing that list as a parameter. The function returns three values, so you will need to use a tuple in the function and in the main code. (See example posted with Class Slides.)

Part (e)

Here we have two parallel lists: one has time values and the other position values. This may be data from a physics lab in which distance is measured at discrete time increments. We would like to use this data to estimate the average velocity versus time. There are a couple of ways to do this, but all the ways involve estimating velocity as $\Delta position / \Delta time$. So, loop through the two lists, calculate a velocity value, and store in a new list. The new list will have one fewer element than the original two lists.