

Name: \_\_\_\_\_

Directions: MAKE SURE TO COPY YOUR ANSWERS TO A SEPARATE SHEET FOR SENDING ME AN ELECTRONIC COPY LATER.

1. (15) Say I run

```
>>> x = {'a':1, 'b':5, 'c':2}
```

and I would like to know what methods are available for the dictionary class. Show the call I could use to do this.

2. (15) Consider the server code on p.83. Suppose we would like to insert code between lines 49 and 50 that prints out the number of clients left. Write such code.

3. (15) We have emphasized that with threaded code, communication between threads is done vi global variables. Find a specific example in our text, with page and line numbers, in which this communication is occurring, where the change to a global by one thread will trigger an action in another thread. Your example must either be a line that makes such a change or reacts to one.

4. (15) Threads systems typically have a *yield* operation, in which is thread basically says, "I give up my turn." In Python, this can be done via the call **time.sleep(0)**. Show the page and line number where this would reduce wasted execution of a thread.

5. (40) The code below returns the keys of the items in dictionary **dct** that are greater than **v**.

Example:

```
>>> x = {'a':1, 'b':3, 'c':2}
>>> highvals(x,2)
['b']
>>> highvals(x,0.5)
['a', 'c', 'b']
>>> highvals(x,1.6)
['c', 'b']
```

Fill in the blanks.

```
def highvals(dct,v):
    return(blank (a)( \
        lambda dctitm: \
            blank (b), \
            blank (c))
```

## Solutions:

1.

```
>>> dir(x)
```

2.

```
print len(cs)
```

3. Page 89, line 35.

4. Page 90, line 72.

5.

```
def highvals(dct, v): \
    return(filter(\
        lambda dctitm: \
            dct[dctitm] > v, \
            dct.keys()))
```