(0) (8 pts.)
(a) Create a string variable, first_name, that is assigned to your first name:

```
first_name = 'CIS'
```

(b) Create a string variable, last_name, that is assigned to your last name:

```
last_name = '122'
```

(c) Create another string variable, name, that is initialized to your entire (first and last) name. Use the variables created in (a) and (b):

```
name = first_name + '' + last_name
```

(d) What will be returned when the following code is then entered into the Python Shell?

```
>>> name
'CIS 122'
```

(e) What will be returned when the following code is then entered into the Python Shell?

```
>>> first_name[0]
'C'
```

(f) What will be returned when the following code is then entered into the Python Shell?

```
>>> 'name'
'name'
```

(g) What will be returned when the following code is then entered into the Python Shell?

```
>>> len('name')
4
```
(1) (8 pts.) A customer at the Duckstore has $75 and is buying some green tshirts that cost $10 each, and some yellow tshirts that cost $11 each. They would like some help determining how many yellow tshirts they can buy if they have already purchased g green tshirts.

```python
>>> start_cash = 75
>>> greent_cost = 10
>>> yellowt_cost = 11
>>> g = int(input('How many green tshirts have been purchased? '))
>>> cash_for_yellowt = start_cash - (greent_cost * g)
>>> y = cash_for_yellowt // yellowt_cost
>>> left = cash_for_yellowt % yellowt_cost
>>> print('You have enough left for ', y, ' yellow tshirts.')
>>> print('You will have ', left, ' dollars left.')
```

What is the value of each variable after the above Python code has been executed? Assume the user enters '3' when asked for the number of green tshirts that have been purchased.

a) start_cash 75
da) greent_cost 10
c) yellowt_cost 11
d) g 3
e) cash_for_yellowt 45
f) y 4
g) left 1

If there were one more line of code:

```python
>>> print('You also purchased ', gggg, ' green tshirts.')
```

What Python error(s) would this generate? Select all that apply.

(a) NameError    (b) Missing argument    (c) TypeError    (d) none of these
(2) (8 pts.) (a) Which of the following are part of programming? Select all that apply.

(aa) writing code  (bb) figuring out the algorithm  (cc) executing the program

(b) Which of the following are expressions? Select all that apply.

(aa) 2 + 4  (bb) a = 3  (cc) round(a)  (dd) 23 - a

(c) Which of the following is/are a(n) valid assignment operation(s)?

(aa) x + 1  (bb) x - 1  (cc) x+ = 1  (dd) s  (ee) 1 = 1 + 1  (ff) x = 5

(d) Every function is executed when it is defined. True or False

(e) A Python string value and numeric value can be concatenated using the '+' operator. True or False

(f) An example of a Python built in function is

(a) round  (b) min  (c) len  (d) all of these.

(3) (6 pts.) What is the result of entering the following expressions into the Python shell?

a) round(100.1)

100

b) 2 ** 4

16

c) str(99)

'99'

d) abs(4)

4

e) max(3, 9, 7, 4)

9

f) 'UO'.lower()

'uo'
(4) (2 pts.) What is the value of z after the following Python code is executed:

```python
def f(x):
    ""
    ""
    x = 2 * x
    return x

>>> z = 1
>>> z = f(z + 1) + f(z + 2)
>>> z
10
```

(5) (2 pts.) Given the following Python code:

```python
def incr(mynum):
    """(number) -> number
    increment input number (mynum) by 1 and return the new value
    ""
    return mynum + 1

>>> incr(3)
4
>>> incr(99)
100
>>> incr(-50)
-49
```

What is the value of x after the following code is executed?

```python
>>> x = 2
>>> x = incr(x)
>>> x *= x
>>> x
9
```
(6) (7 pts.) Given the following function definition:

```python
def stormy(n):
    '''(number) -> float

    Return distance of a storm based on time between thunder and lighting (n).
    
    >>> stormy(10)
    2.0
    >>> stormy(0)
    0.0
    '''
    distance = round(n / 5, 1)
    return distance
```

Complete the following chart:

(a) function name: **stormy**

(b) parameter(s): **n**

(c) local variable(s): **distance**

When the following code is entered into the Python shell, what is the result?

```
>>> stormy
(aa) <function stormy at 0x103d2ed40>  (bb) None  (cc) 3.0 (dd) 3  (ee) none of these
```
(7) (7 pts.) Given the following Python code:

def say_hi(name):
    '''
    returns a friendly hello to someone (name)
    >>> say_hi('Oregon')
    'Hello, Oregon'
    '''
    return('Hello, ' + name)

(a) Write the type contract for function say_hi:

**[string] -> string**

(b) Edit function say_hi to take a second parameter, greeting, that specifies a particular greeting (3 edits). For example,

```python
>>> say_hi('Good morning', 'CIS 122')
'Good morning, CIS122'
```

```python
>>> say_hi('Hello', 'World')
'Hello, World'
```

(1) def say_hi(name, greeting):

(2) docstring: [any one of these is ok]
    (str, str) -> str
    returns a friendly **greeting** (greeting) to someone (name)
    >>> say_hi('Hello', 'World')
    'Hello, World'

(3) return(greeting + ', ' + name)

(c) What is the value of result after the following code is executed?

```python
>>> result = say_hi('Ciao', 'Ducks')
>>> result
```

(aa) None  (bb) 'Ciao'  (cc) 'Ciao, Ducks'  (dd) 'result'
(8) (2 pts.) What value is displayed in the Shell after the following Python code is executed?

```python
>>> def race(time):
    ...
    ...
    time = float(input('what is your time?'))
    time = 8.7
    return time

>>> race(5.4)
8.7
```

CHALLENGE: What is the result when the following Python code is executed?

```python
>>> print(print('The End.'))
The End.
None
```