Name : _____

Grading TA: _____

- INTEGRITY: By taking this exam, you pledge that this is your work and you have neither given nor received inappropriate help during the taking of this exam in compliance with the Academic Honor Code of Georgia Tech. Do NOT sign nor take this exam if you do not agree with the honor code.
- DEVICES: If your cell phone, pager, PDA, beeper, iPod, or similar item goes off during the exam, you will lose 10 points on this exam. Turn all such devices off and put them away now. You cannot have them on your desk.
- ACADEMIC MISCONDUCT: Academic misconduct will not be tolerated. You are to uphold the honor and integrity bestowed upon you by the Georgia Institute of Technology.
  - Keep your eyes on your own paper.
  - Do your best to prevent anyone else from seeing your work.
  - Do NOT communicate with anyone other than a proctor for ANY reason in ANY language in ANY manner.
  - Do NOT share ANYTHING during the exam. (This includes no sharing of pencils, paper, erasers).
  - Follow directions given by the proctor(s).
  - Stop all writing when told to stop. Failure to stop writing on this exam when told to do so is academic misconduct.
  - Do not use notes, books, calculators, etc during the exam.
- TIME: Don't get bogged down by any one question. If you get stuck, move on to the next problem and come back once you have completed all of the other problems. This exam has 11 questions on 8 pages including the title page. Please check to make sure all pages are included. You will have 50 minutes to complete this exam.

I commit to uphold the ideals of honor and integrity by refusing to betray the trust bestowed upon me as a member of the Georgia Tech community. I have also read and understand the requirements outlined above.

Signature: _____

Question	Points	Score
1. Vocabulary	9	
2. Expressions	10	
3. Print v. Return	3	
4. Find the Error	3	
5. Hulk Strings	4	
6. Iffy Letters	4	
7. In the Cups	5	
8. For2While	6	
9. Leaky Pipes	6	
10. Waffles and Pancakes	5	
11. FizzBuzz	6	
Total:	61	

1. *(9 points)*
   For each of the following vocabulary terms, write a concise 1-2 sentence definition. Be brief, and to the point.

   (a) [3 pts] algorithm

   (b) [3 pts] int

   (c) [3 pts] operator

2. *(10 points)*
Pretend you are the python interpreter. Evaluate each of the expressions below. Write down the value that they evaluate to, and the type of that value in the provided columns. If the expression is not valid python syntax, or will throw an exception, simply write "Error". The first line has been provided as an example.

Expression	**Result**	**Type**
1 + 2 * 3	7	int
6 % 4 / 3		
"a" + "b" * 2		
len(range(4,5))		
3.5 * 2		
4**(3.0/2)		

3. *(3 points)*
Pretend you are the Python interpreter and the following code has been entered and executed. Write down exactly what would be printed in the shell!

```
def return1():
    print(1)
    return 1

def someFunc():

    if return1() == 1:
        print('hi')

    if return1() == 0:
        print('bye')


someFunc()
```

4. *(3 points)*
Find the Error: The following code contains a statement that will cause a runtime error. Circle the line and explain what's wrong.

```
e = "2.718"
pi = 3.14
pie = str(pi) + e
print( int(e) )
print( int(pi) )
print( pie )
```

5. *(4 points)*
Examine the following code and write what it would print beside it:

```
phrase = "HULK MAD"
phrase.lower()
phrase.capitalize()
cutPhrase = phrase[:5]
newPhrase = ""

for char in phrase[5:]:
    if char == "m":
        newPhrase = newPhrase + cutPhrase + "Hungry"
    elif char == "d":
        newPhrase = newPhrase + cutPhrase + "Angry"
    elif char == "A":
        newPhrase = newPhrase + cutPhrase + "Smash"

print(newPhrase)
```

6. *(4 points)*
Write what a python interpreter would print when the following code is executed to the right of the code.

```
def mathFunc(x):
   if x%2 == 1:
      print("a")
   else:
      print("b")
   if x/2 <= 5.0:
      print("c")
   if x*1.5 <= 25:
      print("d")
   elif x*1.5 <= 20:
      print("e")
   if x%4 > 2.0:
      print("f")
   elif x%4 >= 2:
      print("g")
   elif x%4 > 1:
      print("h")

mathFunc(10)
```

7. *(5 points)*
Beside the code, write down what the following code would print:

```
for x in range(1,6):
    if x < 4:
        print("cup")
    elif x > 4 and x <= 6:
        print("cake")
    else:
        print("cuppy")
```

8. *(6 points)*
Examine the following code:

```
aStr = "This is only a test!"
for char in aStr:
   print(char*2)
```

Now, the "f" key on your keyboard has failed, so that you can not use the "for" keyword. Re-write all of the code above using a while loop instead of a for loop. You must use a while loop, and may not use the "for" keyword. (Your solution may not use the letter 'f'.)

9. *(6 points)*
Leaky Pipes - What is printed by the following function if it is called with an input of 12?

```
def leakyPipes(n):
   if (n > 0):
      if (n % 4 == 0):
         print "drip %d" % n
         leakyPipes(n-3)
      if (n % 3 == 0):
         print "drop %d" % n

leakyPipes( 12 )
```

10. *(5 points)*
Execute the following piece of code as if you were the python interpreter. Next to the code, write down exactly what would be printed.

```
def mysteryFun1(x):
     print("I love food" + "!" *  x)
     return "waffles"
     print("pancakes")

mystery = mysteryFun1(5)
print("I ate" )
print(mystery*3)
print("I'm so full.")
```

11. *(6 points)*
Write a function named `fizzbuzz` that takes in a single integer parameter. Your function should print out the numbers from 1 to the value of the parameter you passed in, inclusive. Exceptions: If the number is a multiple of three, you should print out the word "Fizz" **instead** of the number. If the number is a multiple of five, you should print out "Buzz" **instead** of the number. If the number is a multiple of **both** three and five, you should print out "FizzBuzz" **instead** of the number. You may assume the integer parameter is non-negative. (If it is zero, your function should do nothing.)

Example run:

```
>>> fizzbuzz(5)
 1
 2
 Fizz
 4
 Buzz
>>>
```

This page intentionally left blank. You may use it for scratch paper. If you place an answer on this page, box it, indicate which problem it is for by number, and BE SURE TO WRITE "Answer on last page" at the problem location!