Name: _____ Recitation: _____ Andrew Id: _____

15-112 Fall 2018 Quiz 3

Up to 20 minutes. No calculators, no notes, no books, no computers. Show your work!
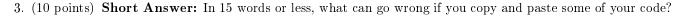
Do not use lists, dictionaries, or recursion on this quiz.

1. (10 points) **Short Answer:** Write a good comment of 10 words or less that could be used in the following function in the box to the right.

```python
def checkLetters(s):
    # Your comment goes here
    for c in s:
        if c in "aeiouAEIOU":
            return True
    return False
```

2. (35 points) **Free Response:** Write the function `getSecretMessage(s)` which takes a string, `s`, and returns the secret message encoded in that string. The encoding works as follows: whenever a number (0-9) occurs in the string, the next letter of the message occurs that number of characters later in the string. For example, given the string "a 2-ton hat", the message would be the string "t", since "t" occurs two characters after "2". Another example is shown below, with the secret message letters capitalized for emphasis. In this example, the resulting secret message is "C0DE".
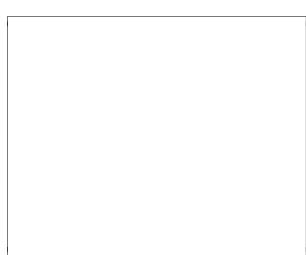
<div align="center">

2-**C**arry-**0**n-a4ten**D**ding-cre8-a-scen**E**-today

</div>

Note that the number 0 always refers to itself. Also, if a number would lead to a letter past the end of the string, you should ignore it. For example, the string "9short" would return the secret message "".

3. (10 points) **Short Answer:** In 15 words or less, what can go wrong if you copy and paste some of your code?

4. (25 points) **Code Tracing:** Indicate what the following program prints. Place your answer (and nothing else) in the box to the right of the code.

```python
import string
def ct(s):
    tmp = ""
    for c in s:
        if c in string.digits:
            tmp += c
    print("1", tmp)
    for c in s[3:5]:
        tmp += chr(ord(c) - 1)
    print("2", tmp)
    print("3", s.lower().find("D"))
    print("4", s[::2])
    return len(s[1:-1])

print(ct("Ax\tD8f\n3?p"))
```

5. (20 points) **Reasoning Over Code**: Find an argument for the following program that makes it return `True`. Place your answer (and nothing else) in the box to the right of the code.

```python
def roc(s):
    assert((type(s) == str) and (len(s) == 8))
    result = ""
    for i in range(3):
        result += s[i]
        result += s[3*i - 7]
        s = s[::-1]
    return result == "python"
```