Name: _____ Section: _____ Andrew Id: _____

15-112 Fall 2017 Quiz 1

Up to 15 minutes. No calculators, no notes, no books, no computers. Show your work!

1. (35 points) **Code Tracing**: Indicate what the following two programs print. Place your answers (and nothing else) in the boxes below the code.

```
def ct1(x, y, z):
    print(x/y + x//y + int(x/y))
    print(y**z + y%z)
    a = int(x) / int(y)
    return isinstance(a, int)

print(ct1(6, 4, 3))
# Hint: Prints 3 values
```

```
def func1(x, y, z):
    print(x)
    return x//y + z
def func2(x, y, z):
    print(y)
    return func1(y*2,x+2,z-3)
def func3(x, y, z):
    print(z)
    return func2(z+5,x+3,y+2)

print(func3(7,4,2))
# Hint: Prints 4 value
```

2. (20 points) **Reasoning Over Code**: Find an argument (the value of n) for the following function that makes it return True. Place your answer (and nothing else) in the box below the code:

```
def rc1(n):
    a = n%10
    b = n%100
    c = n//100
    return (b//6*6 == b) and (b == c + a) and (n > 1000) and (n < 2000)
```

3. (45 points) **Free Response**: Write the function `sumDigits(n)` that returns the sum of the digits of n. You may assume that n is a non-negative, 3 digit integer. So...
`sumDigits(123)` returns 6
`sumDigits(429)` returns 15
`sumDigits(111)` returns 3