1. (15 points) State the errors in the following programs.

#A.

```
def magic(x, y):
    return x + y * 2

result = magic(5, 4, 3)
print(result)
```

There is one too many arguments when calling magic.

#B.

```
def sayMessage():
    print("Reading is fun!")

x = sayMessage()
print(x)
```

sayMessage() should be its own statement.

#C.

```
for i in range(0, 250, -10):
    print("The things you own end up owning you.")
```

'i' will decrease by 10 each time forever, never reaching 250.

2. (15 points) State the output of the following portions of code.

A.

```
count = 1
x = 1
while count <= 5:
    x = x * count
    count += 2
print(x)
```

count	x
1	1
3	3
5	15

15

B.

```
for i in range(0, 4):
    for j in range(1, 3):
        print(j, end = " ")
    print()
```

1 2
1 2
1 2
1 2

C.

```
num = 0
while num <= 20:
    if num < 10:
        print("Cornelius")
    else:
        print("Rupert")
    num += 5
```

Cornelius
Cornelius
Rupert
Rupert
Rupert

3. (10 points) State the output of the following program.

```
class Account:
    def __init__(self, balance = 300):
        self.__balance = balance

    def withdraw(self, amount):
        if amount < self.__balance:
            self.__balance -= amount

    def deposit(self, amount):
        self.__balance += amount

    def getBalance(self):
        return self.__balance

savings = Account()
checking = Account(1000)

savings.withdraw(100)
checking.deposit(50)
savings.deposit(200)
checking.withdraw(450)
savings.withdraw(500)

print(savings.getBalance())
print(checking.getBalance())
```

-100
600

4. (20 points) Evaluate the following Boolean expressions. Show your work.
Suppose `x = 5` and `y = 30`.

#A.
```
(x < 5) or (y > 2)
```

True

#B.
```
(x < 15) and (y > 25)
```

True

#C.
```
not ((x < 5) and (y > 2))
```

not (false)

True

#D.
```
not (((x < 2) or (y > 10)) and (y < 100))
```

not ((true and true))

not (true)

false

5. (20 points) Consider the following portion of code.

```
number = eval(input("Enter a number: "))
output = 0

if number > 10:
    number -= 10
    output = number
elif number == 10:
    number += 5
    output = number
elif number % 2 == 0:
    number = number // 2
    output = number
else:
    output = 99

print(output)
```

A. What is the output when number is 12? 2

B. What is the output when number is 4? 4

C. What is the output when number is 7? 99

D. What is the output when number is 10? 15

6. (15 points) Consider the following portion of code. What is the output?

A.

```
for i in range(2, 5):
    print(i, end = "+++")

print()
```

2+++ 3 +++ 4 +++

B.

```
for i in range(0, 8, 2):
    number = i + 0.671
    print(format(number, ".4f"))
```

0.0671
2.0671
4.0671
6.0671

7. (10 points) What is the output of the following portions of code?

A.

```
for i in range(10):
    if i == 5 or i == 6:
        continue
    print(i, end = " ")
```

0 1 2 3 4 7 8 9

B.

```
for i in range(10):
    if i == 5 or i == 6:
        break
    print(i, end = " ")
```

0 1 2 3 4

8. (15 points) What is the output of the following portion of code?

A.

```
count = 0
for i in range(9):
    for j in range(5):
        count += 1

print(count)
```

45

B.

```
count = 0
for i in range(4, 11):
    for j in range(2, 5):
        count += 1

print(count)
```

21

C.

```
count = 0
for i in range(10, 3, -2):
    for j in range(2, 8, 3):
        count += 1

print(count)
```

4

9. (20 points) Consider the following portion of code.

```
magic = eval(input("Enter a magic integer: "))

if magic < 5:
    print("It's an illusion")

if magic <= 10:
    print("Abracadabra")

if magic >= 20:
    print(lucky, "you are the next Harry Houdini")
```

A. What is the output when `magic` is 10?

Abracadabra

B. What is the output when `magic` is 4?

It's an illusion

C. What is the output when `magic` is 31?

you are the next Harry Houdini

D. What is the output when `magic` is 19?

Nothing

10. (10 points) What is the output of the following program?

```
x = 10
y = 20

def displayNumber(x):
    x *= 3
    y = 6
    print(x, " ", y)

displayNumber(x)
print(x)
print(y)
```

30 6

10

20