Quiz: Counting (Practice Problems)

Note 1. The format of this quiz will be the same as the previous quiz (4 problems, each worth 1 point). 1 of these problems will be taken from the material from topic 0, and the other 3 problems will be on functions following the problems below.

1 Nested for loops

Problem 1. Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
$ cd; rm -rf quiz; mkdir quiz; cd quiz
$ N=8
$ cat > foo.py <<EOF
count = 0
for i in range($N):
    count += 1
print('count=', count)
EOF
$ python3 foo.py
```

Problem 2. Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
$ cd; rm -rf quiz; mkdir quiz; cd quiz
$ N=8
$ cat > foo.py <<EOF
count = 0
for i in range($N):
    for j in range($N):
        count += 1
print('count=', count)
EOF
$ python3 foo.py
```

Problem 3. Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
$ cd; rm -rf quiz; mkdir quiz; cd quiz
$ N=8
$ cat > foo.py <<EOF
count = 0
for i in range($N):
    for j in range($N):
        for k in range($N):
            count += 1
print('count=', count)
EOF
$ python3 foo.py
```

2 Sequential for loops

Problem 4. Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
$ cd; rm -rf quiz; mkdir quiz; cd quiz
$ N=8
$ cat > foo.py <<EOF
count = 0
for i in range($N):
    count += 1
for i in range($N):
    count += 1
print('count=', count)
EOF
$ python3 foo.py
```

Problem 5. Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
$ cd; rm -rf quiz; mkdir quiz; cd quiz
$ N=8
$ cat > foo.py <<EOF
count = 0
for i in range($N):
    count += 1
for i in range($N):
    count += 1
for i in range($N):
    count += 1
print('count=', count)
EOF
$ python3 foo.py
```

3 Combinations of sequential and nested loops

Problem 6. Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
$ cd; rm -rf quiz; mkdir quiz; cd quiz
$ N=8
$ cat > foo.py <<EOF
count = 0
for i in range($N):
    for j in range($N):
        count += 1
for i in range($N):
    count += 1
    count += 1
count += 1
print('count=', count)
EOF
$ python3 foo.py
```

Problem 7. Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
$ cd; rm -rf quiz; mkdir quiz; cd quiz
$ N=8
$ cat > foo.py <<EOF
count = 0
for i in range($N):
    count += 1
    for j in range($N):
        count += 1
for i in range($N):
    count += 1
print('count=', count)
EOF
$ python3 foo.py
```

Problem 8. Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
$ cd; rm -rf quiz; mkdir quiz; cd quiz
$ N=8
$ cat > foo.py <<EOF
count = 0
for i in range($N):
    count += 1
for i in range($N):
    count += 1
    for j in range($N):
        count += 1
    count += 1
    for j in range($N):
        count += 1
        for k in range($N):
            count += 1
for i in range($N):
    count += 1
print('count=', count)
EOF
$ python3 foo.py
```

4 "Simple" Expressions in Multiple Variables

Problem 9. Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
$ cd; rm -rf quiz; mkdir quiz; cd quiz
$ N=8
$ M=4
$ cat > foo.py <<EOF
count = 0
for i in range($N):
    for j in range($M):
        count += 1
print('count=', count)
EOF
$ python3 foo.py
```

Problem 10. Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
$ cd; rm -rf quiz; mkdir quiz; cd quiz
$ N=8
$ M=4
$ cat > foo.py <<EOF
count = 0
for i in range($N):
    count += 1
for j in range($M):
    count += 1
print('count=', count)
EOF
$ python3 foo.py
```

Problem 11. Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
$ cd; rm -rf quiz; mkdir quiz; cd quiz
$ N=8
$ M=4
$ cat > foo.py <<EOF
count = 0
for i in range($N):
    count += 1
    for j in range($M):
        count += 1
    for j in range($N):
        count += 1
for i in range($M):
    count += 1
    for j in range($M):
        count += 1
        count += 1
        count += 1
print('count=', count)
EOF
$ python3 foo.py
```

Problem 12. Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
$ cd; rm -rf quiz; mkdir quiz; cd quiz
$ N=8
$ M=4
$ O=2
$ cat > foo.py <<EOF
count = 0
for i in range($N):
    count += 1
    for j in range($M):
        count += 1
    for j in range($O):
        count += 1
for i in range($M):
    count += 1
    for j in range($O):
        count += 1
        count += 1
        count += 1
print('count=', count)
EOF
$ python3 foo.py
```

5 "Complex" Expressions in Multiple Variables

Problem 13. Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
$ cd; rm -rf quiz; mkdir quiz; cd quiz
$ N=8
$ M=4
$ O=2
$ cat > foo.py <<EOF
count = 0
for i in range($N * $M):
    for j in range($M * $O):
        count += 1
print('count=', count)
EOF
$ python3 foo.py
```

Problem 14. Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
$ cd; rm -rf quiz; mkdir quiz; cd quiz
$ N=8
$ M=4
$ O=2
$ cat > foo.py <<EOF
count = 0
for i in range($N + $M):
    for j in range($M * $O):
        count += 1
print('count=', count)
EOF
$ python3 foo.py
```

Problem 15. Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
$ cd; rm -rf quiz; mkdir quiz; cd quiz
$ N=8
$ M=4
$ O=2
$ cat > foo.py <<EOF
count = 0
for i in range($N + $M):
    count += 1
for i in range($M * $O):
    count += 1
print('count=', count)
EOF
$ python3 foo.py
```

Problem 16. Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
$ cd; rm -rf quiz; mkdir quiz; cd quiz
$ N=8
$ M=4
$ O=2
$ cat > foo.py <<EOF
count = 0
for i in range($N + $M):
    count += 1
    for j in range($N ** $O):
        count += 1
for i in range($M * $O):
    count += 1
print('count=', count)
EOF
$ python3 foo.py
```

Problem 17. Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
$ cd; rm -rf quiz; mkdir quiz; cd quiz
$ N=8
$ M=4
$ O=2
$ cat > foo.py <<EOF
count = 0
for i in range($N + $M):
    count += 1
for i in range($N ** $O):
    count += 1
    for j in range($M + $O):
        count += 1
print('count=', count)
EOF
$ python3 foo.py
```

Note 2. The only math operations I will use in the real quiz are addition, multiplication, and exponentiation.