

CSC 116 – 002 In-class Exercise #3

Name: Solution Unity ID: \_\_\_\_\_ Lab: \_\_\_\_\_

1. What is the difference between a while loop and a do-while loop?

**A while loop checks the Boolean expression before executing the loop body. The do-while loop will execute the loop at least once before checking the condition.**

2. Write a for loop that calculates 7!. Remember that  $x! = (x)(x - 1)(x - 2) \dots (2)(1)$

```
int factorial = 1; //needs to be 1 otherwise multiply by 0
for(int i = 1; i <= 7; i++) {
    factorial *= i;
}
```

```
int factorial = 1;
for(int i = 7; i >= 1; i--) {
    factorial *= i;
}
```

Extra Credit: What is 7!? **5040**