CRT - Chapter 4

1. a) Display *Great job!* when grease is 90 or higher

```
If (grade > 90) {
        System.out.print("Great job!"); }
```

b) Display *Error* when *number* is less than 20 or greater than 50

```
If ((number < 20) || (number > 50)) {
        System.out.print("Error"); }
```

c) Add *2* to the value of *y* when *y* is less than 100

```
If ( y < 100) {
y += 2; }
```

2. Assume num1 and num2 contain integer values. Write an if-else if statement that displays one of the following messages as appropriate.

```
if (num1 > num2) {
        System.out.print("First number is larger.");
}
else (num1 < num2) {
        System.out.print("Second number is larger.");
}
else (num1 == num2) {
        System.out.print("Numbers are equal.");
}
```

3. Which is the appropriate word, odd or even for the blanks below

a)

```
If (num % 2 == 0) {
        System.out.println(" Even number");
} else {
        System.out. println(" Odd number");
```

b) Rewrite the if-else as a switch statement

```
switch (num % 2 == ) {
case 0:
        System.out.println("Even number");
        Break;
case 1:
        System.out.println("Odd number");
        Break;
```

4. Write staterments that use Math.random() to generate random numbers for each of the following situations

a) Generate a random integer between 1 and 50

```
int randomInt = (int) (50 * Math.random() + 1);
```

b) Generate a random integer between 20 and 100

```
int randomInt = (int) (81 * Math.random() + 20);
```

c) Generate a random double between 10 and 20, inclusive.

```
int randomNum = (int) (11 * Math.random() + 10);
```

5. Identify the logical errors in the statements below, which should display a single appropriate message for any value of age:

```
If (age < 18) {
        System.out.println(“Child”);
} else if (age >= 18 && age < 65) {
        System.out.println(“Adult”);
} else {
        System.out.println(“Senior”);
}
```

* Added “>=” to account for the age 18 and else statement to account for any age above 65 *

6. a) True
   b) False
   c) True
   d) True
   e) True
   f) True
   g) True

8. a) True

b) False - The nested IF statement is placed within another if statement, An if else statement checks multiple conditions within the same level

c) False - In a switch statement the expression can be evaluated as an int or string but cannot be a double

d) True

e) False - In java you can do Random.nextInt() to receive a random int. Casting as a double is used when you need a floating-point number

f) True

g) True

h) False - The (!) operator is evaluated before the (&&) operator. Meaning the (!) operator takes precedence

i) True

j) True