1

a. if (grade >= 90) {
System.out.print(“Great Job!”)
}

b. if (number < 20 || number > 50) {
System.out. print(“Error”);
}

c. if (y < 100) {
y = y + 2;
}

2

if (num1 >num2) {
System.out.print(“First Number is larger”);
} else if (num1 < num2) {
System.out.print(“Second number is larger”)
} else {
System.out.print(“Numbers are equal”);
}

3

a. if (num % 2 == 0) {
System.out.println("_even__ number");
} else {
System.out.println("_odd__ number"); }

b. switch (num % 2 == 0) {
case 0: System.out. print(“Even Number”);
break;
default: System.out.print(“Odd Number”);
break;
}

4

a. int num= rand.nextInt(50) +1;
b. int num = rand.nextInt(81) + 20;
c. double num= (Math.random () * 10);

5

The mistake is that there is no category for the age 18 or 65.
Corrected code:

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

```
        System.out.println("senior");
}
```

6

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

8

a. True
b. False - Roundoff errors only happen with double or floats
c. False - An if statement needs a condition that results in true or false while a nested if lets you check for a condition inside another condition- structure and logic are different.
d. False - Switch can only use int, char, string, or enum - no double or floats.
e. True
f. False - using the same seed always gives the same sequence
g. True
h. True
i. False- the (!) operator is also displayed first and then the (&&) and/or (||)
j. True
k. True
l. true