Recursion

1. Consider the following method:

```
public static void mystery1(int n) {
   if (n <= 1) {
      System.out.print(n);
   } else {
      mystery1(n / 2);
      System.out.print(", " + n);
   }
}
```

For each of the following calls, indicate the output that is produced by the method:

a. mystery1(1); 1
b. mystery1(2); 1,2
c. mystery1(3); 1,3
d. mystery1(4); 1,2,4
e. mystery1(16); 1,2,4,8,16
f. mystery1(30); 1,3,7,15,30
g. mystery1(100); 1,3,6,12,25,50,100

2. Consider the following method:

```
public static int mystery4(int x, int y) {
   if (x < y) {
      return x;
   } else {
      return mystery4(x – y, y);
   }
}
```

For each of the following calls, indicate the value that is returned:

a. mystery4(6, 13) 6
b. mystery4(14, 10) 4
c. mystery4(37, 10) 7
d. mystery4(8, 2) 0
e. mystery4(50, 7) 1