Java   Name –
Recursion Worksheet #1   Period –

1. Trace the following program and show the separate stack frames (i.e. the values of the parameters and/or local variables in each stack frame). Show the final output in the rectangle provided as well.

```java
public class RecursionWorksheet1Ex1
{
   public static void main(String[] args)
   {
      int num = 10;
      System.out.println(mystery(num));
   }

   public static int mystery(int myNum)
   {
      if (myNum < 2)
         return 3;
      else
         return 2 + mystery(myNum - 2);
   }
}
```
Output:

2. What is the output of the program in Exercise #1 if the original value of the variable num is 1 instead of 10?

3. Trace the following program and show the separate stack frames (i.e. the values of the parameters and/or local variables in each stack frame). Show the final output in the rectangle provided as well.

```java
public class Ch17Worksheet1Ex3
{
   public static void main(String[] args)
   {
      int num = 13;
      System.out.println(mystery(num));
   }

   public static int mystery(int myNum)
   {
      if (myNum <= 0)
         return 0;
      else if (myNum % 2 == 0)
         return 2 + mystery(myNum - 1);
      else
         return 1 + mystery(myNum - 2);
   }
}
```

Output: