

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.

```
#include <iostream.h>

int mystery(int);

int main()
{
    int num = 10;
    cout << mystery(num) << endl;
    return 0;
}

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?

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.

```
#include <iostream.h>

int mystery(int);

int main()
{
    int num = 13;
    cout << mystery(num) << endl;
    return 0;
}

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: