CSC 210 Homework #1

A little homework based on Chapter 7, recursion.
Due: Next class… Jan 7th

1. Consider the following recursive function.

```
public static int mystery(int a, int b) {
   if (b == 0)          return 0;
   else if (b % 2 == 0) return mystery(a+a, b/2);
   else                 return mystery(a+a, b/2) + a;
}
```
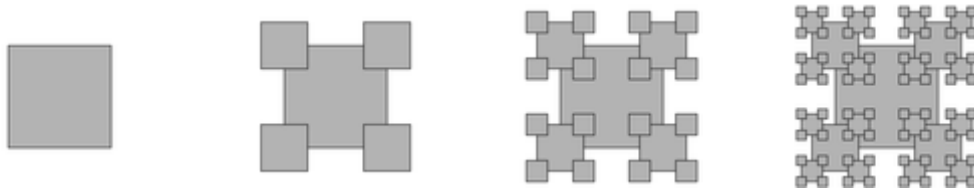
What are the values of `mystery(2, 25)` and `mystery(3, 11)`? Given positive integers `a` and `b`, describe what value `mystery(a, b)` computes.

2. Consider the following recursive function. What is `mystery(1, 7)`?

```
public static int mystery(int a, int b) {
   if (0 == b) return 0;
   else return a + mystery(a, b-1);
}
```

Will the function in the previous exercise terminate for every pair of integers `a` and `b` between 0 and 100? Give a high level description of what `mystery(a, b)` returns, given integers a and b between 0 and 100.

3. **Recursive squares.** Write pseudo-code for the following recursive pattern.

4. Enter the program `gcd()` from page 359 of our textbook. Like this:
   - Please use NetBeans
   - Place your solution in your k: drive folder
   - Accept input values m, n from the console (user) and output the answer.

Hint: here's a code snippet to read an integer value from the console.

```
System.out.print("Enter your age: ");
Scanner s = new Scanner( System.in);
int age = s.nextInt();
```