CS5000 Review

1. Write java code to create and integer variable called a, and assign it the value 5

2. Write java code to create a boolean variable, called amISmart and assign it the value true.

3. Given the following code fragment, what would be the value of ans at the end ?

```
int a=10, b;
a=a+5;
b=a+4;
int ans=a+b;
```

4. Given the following function, what would foo(3,10,15) return ?

```
public static boolean foo(int number, int low, int high){
    return number>=low && number>=high;
}
```

5. Given the function above, what would foo(15,12,20) return ?

6. Write a function called isOdd that takes an int and returns a boolean; the function returns true if the number is odd and false otherwise (remember the % operator returns the remainder of the integer division of two numbers).
7. Write a function called isLarge that takes an int and returns a boolean; the function returns true if its argument is larger than 1000, false otherwise.
8. Write a function called fizz, that takes an integer and returns a String. The function returns “fizz” if its argument is divisible by 3, and the number otherwise (remember concatenating “” to a number allows you to convert it to its string representation).
9. Given the following function:

```
public static int bar(int a) {
    if (a<=0)
        return 2;
    else
        return a*bar(a-1);
}
```

What would bar(-1) return ? What would bar(3) return ?

10. Given the following function:

```
public static String baz(char c1, char c2) {
        String ans="";
        for(char c=c1; c<=c2; ++c)
                ans+=c;
        return ans;
}
```

What would baz('a','d') return ?

11. Write a function called printFromTo, which takes two integer parameters, and prints all numbers between its first and second parameters, including both parameters (print a newLine character after each number).
12. How would your function be different if you don't want to include the values for the parameters ?.
13. Write a function called printDownFromTo, which takes two integer parameters, and prints all numbers counting DOWN between its first and second parameters (the first parameter will be larger than the second) , including both parameters (print a newLine character after each number).
14. Using a while loop (and no recursion or other kinds of loops), write a function called power, that takes two integer parameters, say base and exponent, and returns the first parameter (base) raised to the second parameter (exponent), by performing repeated multiplications.
    a. now do it with a for loop
    b. and now do it using recursion
15. Given the following function:

```
public static f2(String s, char c)
{
        for(int i=0; i<s.length();++i)
                if(s.charAt(i)==c)
                        return true;
        return false;
}
```

What would f2("Hello",'a') return ?
How about f2("Hello",l) ?

16. Given the following function:

```
public static int f3(String s, char c)
{
      int count=0;
      int i=0;
      while (i<s.length())  {
            if(s.charAt(i)==c)
                  ++count;
            ++i;
      }
      return count;
}
```

What would f3(“Hello”,’l’) return ?
How about f3(“Hola”,’e’) ?

17. Given the following function:

```
public static String f4(String s, char from, char to)
{
      String accum="";

      for(int i=0; i<s.length();++i) {
            if(s.charAt(i)>=from && s.charAt(i)<=to)
                  accum+=s.charAt(i);
      }
      return accum;
}
```

What would f4(“abcdefg”, ‘c’,’g’) return ?