

CS5000 Review

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

```
int a=5;
```

- could also write as two separate statements

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

```
boolean amISmart=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 ? **false**

```
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 ? **false**

- notice I am comparing for both `>=low` and `>=high`, which usually means `>=high` if `high>low` :)

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).

```
public static boolean isOdd(int number)  
{  
    return (number%2) != 0;  
}
```

- you could also use an `if` statement, and there might be other possible solutions
- `public static` is not strictly necessary, but ...

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.

```
public static boolean isLarge(int number)  
{
```

```

    return number > 1000;
}

```

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).

```

public static String fizz(int a) {
    if (a%3==0)
        return "fizz";
    else
        return ""+a;
}

```

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 ? **2** What would `bar(3)` return ? **12**

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 ? **"abcd"**

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 ? **false**

How about f2("Hello", 'l') ? **true**

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 ? **2**

How about f3("Hola", 'e') ? **0**

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 ?