

CS 102: Extra Problems, 9/14/09

1. What is the output to the screen?

```
public class Prob{
    public static void main(String[] args){
        int[] b = new int[10];
        int c = 27;
        for (int i=0; i<10; i++)
            b[i] = i*i;

        change(b,c);
        System.out.println(c);
        for (int x : b)
            System.out.print(x + " ");
        System.out.println();
    }

    public static void change (int[] ar, int v){
        v = 19;
        for (int j=0; j<ar.length; j++)
            if (ar[j]>15)
                ar[j]--;
    }
}
```

2. Write a method

```
public static void cycleArray(int[] ar)
```

which moves each value in the array `ar` down by one index, and places the last value in `ar` to the initial position in the array. For example, after the following code fragment

```
int[] numArray = {5, 3, 2, 13, 6};
cycleArray(numArray);
```

executes, `numArray` should hold the values 6 5 3 2 13 (all its values have “cycled” one spot to the left).

3. Consider the `Num` class below (this is the same as Listing 6.17 in Lewis & Loftus, with the addition of the `getValue` method).

```
public class Num{
    private int value;
    public Num (int update){
        value = update;
    }
    public void setValue (int update){
        value = update;
    }
    public int getValue(){
        return value;
    }
    public String toString(){
        return value + "";
    }
}
```

What is the output of the following program?

```
public class Problem1{
    public static void main (String[] args){
        int p = 5, q = 6;
        Num a = new Num(13), b = new Num(20);
        System.out.println(p + " " + q + " " + a + " " + b);
        switchValues(p,q);
        switchValues(a,b);
        System.out.println(p + " " + q + " " + a + " " + b);
    }
    public static void switchValues (int m, int n){
        int temp = m;
        m = n;
        n = temp;
    }
}
```

```
public static void switchValues (Num x, Num y){  
    int xValue = x.getValue();  
    x.setValue(y.getValue());  
    y.setValue(xValue);  
}  
}
```