Homework2

Assignment 1: Divisors

```java
public class Divisors {
    public static void main (String[] args) {
       int num = Integer.parseInt(args[0]);
       for (int i = 1; i <= num; i++) {
          if (num%i == 0) {
             System.out.println(i);
          }
       }
    }
}
```

Assignment 2: Reversing a string

```java
public class Reverse {
    public static void main (String[] args){
       String word = args[0];
       for (int i = word.length()-1; i >= 0; i--) {
          System.out.print (word.charAt(i));
       }
       System.out.println();
       char middle = word.charAt(((word.length()-1)/2));
       System.out.println("The middle character is " + middle);
    }
}
```

Assignment 3: Lucky streak

```
public class InOrder {
    public static void main (String[] args) {
       int pre = (int)(Math.random()*(10-0));
       System.out.print(pre + " ");
       int next = (int)(Math.random()*(10-0));
       while (next>=pre) {
          System.out.print(next + " ");
          pre = next;
          next = (int)(Math.random()*(10-0));
       }
    }
}
```

Assignment 4: Perfect Numbers

```
public class Perfect {
    public static void main (String[] args) {
       int num = Integer.parseInt(args[0]);
       int sum = 1;
       String sentence = "";
       for (int i = 2; i < num; i++) {
          if (num%i == 0) {
             sum = sum + i;
             sentence = sentence + " + " + i;
          }
       }
       if (sum == num) {
          System.out.println(num + " is a perfect number since " +
num + " = 1" + sentence);
       } else {
          System.out.println(num + " is not a perfect number");
       }
    }
}
```

Assignment 5: Damka Board

```java
public class DamkaBoard {
    public static void main(String[] args) {
       int n = Integer.parseInt(args[0]);
       for (int i = 0; i < n; i++) {
          for(int j = 0; j < n; j++) {
             if (j == (n-1) && i % 2 == 0) {
                System.out.print("* ");
             }
             else if (j == (n-1)) {
                System.out.print("*");
             } else {
                System.out.print("* ");
             }
          }
          System.out.println();
          if (i%2 == 0 && i != n-1) {
             System.out.print(" ");
          }
       }
       System.out.println();
    }
}
```

Assignment 6: One of Each Stats

```
public class OneOfEachStats {
    public static void main (String[] args) {
       // Gets the two command-line arguments
       int T = Integer.parseInt(args[0]);
       int seed = Integer.parseInt(args[1]);
       // Initailizes a random numbers generator with the given seed
value
        Random generator = new Random(seed);
       double sumToAverage = 0;
       int sum2 = 0;
       int sum3 = 0;
       int sum4 = 0;
       int sum = 0;
       String commonNum = "";
       for (int i = 1; i<=T; i++) {
          int b = 1;
          int g = 2;
          boolean girl = false;
          boolean boy = false;
          while (boy == false || girl == false) {
             int random = (int)(generator.nextDouble()*2+1);
             sum = sum + 1;
             sumToAverage = sumToAverage + 1;
             if (random == b) {
                boy = true;
             } else {
                girl = true;
             }
          }
          if (sum == 2) {
             sum2 = sum2 + 1;
          } else if (sum == 3) {
             sum3 = sum3 + 1;
          } else if (sum >= 4) {
             sum4 = sum4 + 1;
          }
          sum = 0;
       }
       sumToAverage = sumToAverage/T;
       int sumMax = Math.max(Math.max(sum2,sum3),sum4);
       if (sumMax == sum2) {
          commonNum = "2";
       } else if (sumMax == sum3) {
          commonNum = "3";
       } else if (sumMax == sum4) {
          commonNum = "4 or more";
       }
       System.out.println("Average: " + sumToAverage + " children to
get at least one of each gender.");
       System.out.println("Number of families with 2 children: " +
sum2);
       System.out.println("Number of families with 3 children: " +
sum3);
       System.out.println("Number of families with 4 or more
children: " + sum4);
       System.out.println("The most common number of children is " +
commonNum + ".");
    }
}
```