HW2 Code – Tomer Shulner

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);
            }
        }
    }
}
```

2. Reverse

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

3. InOrder

```java
public class InOrder {
    public static void main (String[] args) {
        int first_num = (int)(Math.random() * 10);
        System.out.print(first_num + " ");
        int second_num = (int)(Math.random() * 10);
        if (second_num >= first_num) {
            do {
                System.out.print(second_num + " ");
                first_num = second_num;
                second_num = (int)(Math.random() * 10);
            }
            while (second_num >= first_num);
        }
    }
}
```

4. DamkaBoard

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

            }
            System.out.println();
        }
    }
}
```

5. Perfect

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

6. OneOfEachStats

```
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);

        int times = Integer.parseInt(args[0]);
        int all_kids = 0;
        int families_with_2 = 0;
        int families_with_3 = 0;
        int families_with_4_or_more = 0;
        for (int i = 0; i < times; i++) {
            Boolean have_boy = false;
            Boolean have_girl = false;
            int family_kids = 0;
            while (!have_boy || !have_girl) {
                double chance = generator.nextDouble();
                if (chance > 0.5) {
                    have_girl = true;
                }
                else {
                    have_boy = true;
                }
                family_kids += 1;
                all_kids += 1;
            }
            switch (family_kids) {
                case 2: families_with_2 += 1;
                        break;
                case 3: families_with_3 += 1;
                        break;
                default: families_with_4_or_more += 1;
                         break;

            }
        }
        double average = all_kids / (double) times;
        System.out.println("\nAverage: " + average + " children to get at least
one of each gender.");
        System.out.println("Number of families with 2 children: " +
families_with_2);
        System.out.println("Number of families with 3 children: " +
families_with_3);
```

```
        System.out.println("Number of families with 4 or more children: " +
families_with_4_or_more);

        int max = Math.max(families_with_2, Math.max(families_with_3,
families_with_4_or_more));
        String max_to_print;
        if (max == families_with_2) {
            max_to_print = "2";
        }
        else {
            if (max == families_with_3) {
                max_to_print = "3";
            }
            else {
                max_to_print = "4 or more";
            }
        }
        System.out.println("The most common number of children is " +
max_to_print + ".");

    }
}
```