Home assignment 2 – Tal Frankenthal

1)

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

2)

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

	}
}
```

3)

```
public class InOrder {
	public static void main (String[] args) {
		//// Write your code here
		int num = (int)(Math.random() * 10);
		int smallernum = 0;
		while(num >= smallernum){
			System.out.print(num + " ");
			smallernum = num;
			num = (int)(Math.random() * 10);
		}
		System.out.println();
	}
}
```

4)

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

5)

```
public class DamkaBoard {
	public static void main(String[] args) {
		//// Put your code here
		int block = Integer.parseInt(args[0]);
		int row = 1;
		for (int i = 0; i < block; i++) {
			if(row % 2 != 0){
				for (int j = 0; j < block; j++) {
					System.out.print("* ");
				}
			}
			if(row % 2 == 0){
				for (int k = 0; k < block; k++) {
					System.out.print(" *");
				}
			}
			row++;
			System.out.println();
		}
	}
}
```

6)

```
public class OneOfEach {
	public static void main (String[] args) {
		//// Put your code here
		boolean girl = false;
		boolean boy = false;
		int count = 0;
		double randnum = 0.0;
		while(girl == false || boy == false){
			randnum = Math.random();
			if(randnum > 0.5){
				System.out.print("g ");
				girl = true;
			}
			if(randnum < 0.5){
				System.out.print("b ");
				boy = true;
			}
			count++;
		}
		System.out.println();
		System.out.println("You made it... and now you have " + count +
		" childrens.");
	}
}
```

7)

```
public class OneOfEachStats1 {
	public static void main (String[] args) {
		//// Put your code here
		double family = Double.parseDouble(args[0]);
		boolean girl = false;
		boolean boy = false;
		double count = 0;
		double sumchildrens = 0;
		double average = 0;
		int famwith2 = 0;
		int famwith3 = 0;
		int famwith4 = 0;
		double randnum = 0.0;
		for (double i = 0; i < family ; i++) {
			while(girl == false || boy == false){
				randnum = Math.random();
			if(randnum > 0.5){
				girl = true;
			}
			if(randnum < 0.5){
				boy = true;
			}
			count++;
			}
			if(count == 2){
				famwith2++;
			}
			if(count == 3){
				famwith3++;
			}
			if(count >= 4){
				famwith4++;
			}
			sumchildrens += count;
			count = 0;
			girl = false;
			boy = false;
		}
		average = sumchildrens / family;
		System.out.println("Average: " + average + " children to get at
		least one of each gender.");
```

```
                System.out.println("Number of families with 2 children: " +
                (int)(famwith2));
                System.out.println("Number of families with 3 children: " +
                (int)(famwith3));
                System.out.println("Number of families with 4 or more children:
                " + (int)(famwith4));
                if(famwith2 >= famwith3 && famwith2 >= famwith4){
                        System.out.println("the most common number of
                        children is 2.");
                }
                else{
                        if(famwith3 >= famwith4){
                                System.out.println("the most common number of
                                children is 3.");
                        }
                        else{
                                System.out.println("the most common number of
                                children is 4 or more.");
                        }
                }

        }
}
```

8)

```
public class OneOfEachStats {
	public static void main (String[] args) {
		int T = Integer.parseInt(args[0]);
		int seed = Integer.parseInt(args[1]);
		double family = (double)(T);
		boolean girl = false;
		boolean boy = false;
		double count = 0;
		double sumchildrens = 0;
		double average = 0;
		int famwith2 = 0;
		int famwith3 = 0;
		int famwith4 = 0;
		double randnum = 0.0;
		for (double i = 0; i < family ; i++) {
			while(girl == false || boy == false){
				randnum = generator.nextDouble();
			if(randnum > 0.5){
				girl = true;
			}
			if(randnum < 0.5){
				boy = true;
			}
			count++;
			}
			if(count == 2){
				famwith2++;
			}
			if(count == 3){
				famwith3++;
			}
			if(count >= 4){
				famwith4++;
			}
			sumchildrens += count;
			count = 0;
			girl = false;
			boy = false;
		}
		average = sumchildrens / family;
		System.out.println("Average: " + average + " children to get at
		least one of each gender.");
```

```
                System.out.println("Number of families with 2 children: " +
                (int)(famwith2));
                System.out.println("Number of families with 3 children: " +
                (int)(famwith3));
                System.out.println("Number of families with 4 or more children:
                " + (int)(famwith4));
                if(famwith2 >= famwith3 && famwith2 >= famwith4){
                        System.out.println("The most common number of
                        children is 2.");
                }
                else{
                        if(famwith3 >= famwith4){
                                System.out.println("The most common number of
                                children is 3.");
                        }
                        else{
                                System.out.println("The most common number of
                                children is 4 or more.");
                        }
                }

        }
}
```