1. Divisors.java

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

2. Reverse.java

```
public class Reverse {
      public static void main (String[] args){
      String str = args [0];
      String result = "";
      char ch;
      char mid;
      for (int i = 0; i < str.length(); i++){
            ch = str.charAt(i);
            result = ch + result;
      }
      System.out.println(result);

      if (str.length() %2 == 0){
            mid = str.charAt((str.length() / 2) - 1); }
      else {
            mid = str.charAt(str.length()/2); }

      System.out.println("The middle character is " + mid);
}
}
```

3. InOrder.java

```
public class InOrder {
      public static void main (String[] args) {
            int firstNum = (int) (Math.random()*10) ;
            System.out.print(firstNum + " ");
            boolean run = true;
            do {
                  int nextNum = (int) (Math.random()* 10);
                  if (nextNum >= firstNum){
                        System.out.print(nextNum + " ");
                        firstNum = nextNum;}
                  else
                        run = false;
            } while (run);
                  System.out.println();

}
}
```

4. Perfect.java

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

5. DamkaBoard.java

```
public class DamkaBoard {
      public static void main(String[] args) {
            int num = Integer. parseInt(args[0]);
            for (int i = 0 ; i < num ; i++){
                  if (i %2 == 0) {   // if the row is even ->
starts with "* "
                        for (int j = 0 ; j < num ; j++){
                              System.out.print("* ");
                        }
                  }
                  else {
                        for (int j = 0; j < num; j++ ) { // if
the row is odd -> starts with " *"
                              System.out.print(" *");
                              }
                  }
                  System.out.println();
                        }


                  }
            }
```

6. OneOfEach.java

```
public class OneOfEach {
      public static void main (String[] args) {
            int count = 0;
            boolean Boy = false;
            boolean Girl = false;
            while (!(Boy && Girl)) {
                  boolean isChildBoy = Math.random() < 0.5;
                  if (isChildBoy){
                        Boy = true;
                        System.out.print("b ");
                  } else {
                        Girl = true;
                        System.out.print("g ");
                  }
                  count = count+1;
      }
            System.out.println();
                  System.out.println("You made it... and now you
have " + count + " children");

}
}
```

7. OneOfEachStats1.java

```
public class OneOfEachStats1 {
    public static void main(String[] args) {
        int T = Integer.parseInt(args[0]);
        int totalChildren = 0;
        int experiments = T;

        for (int i = 0; i < T; i++) {
            int count = 0;
            boolean Boy = false;
            boolean Girl = false;

            while (!(Boy && Girl)) {
                boolean isChildBoy = Math.random() < 0.5;
                if (isChildBoy) {
                    Boy = true;
                    System.out.print("b ");
                } else {
                    Girl = true;
                    System.out.print("g ");
                }
                count = count + 1;
            }
            System.out.println();
            totalChildren += count;
        }

        double average = (double) totalChildren / (double)
experiments;
```

```
double twoChildren = 0;
double threeChildren = 0;
double fourOrMoreChildren = 0;
double mostCommon = 0;

for (int i = 0; i < T; i++) {
    int count = 0;
    boolean Boy = false;
    boolean Girl = false;

    while (!(Boy && Girl)) {
        boolean isChildBoy = Math.random() < 0.5;
        if (isChildBoy) {
            Boy = true;
        } else {
            Girl = true;
        }
        count = count + 1;
    }

    if (count == 2) {
        twoChildren++;
    } else if (count == 3) {
        threeChildren++;
    } else {
        fourOrMoreChildren++;
    }
}
```

```
        if (twoChildren > threeChildren && twoChildren >
fourOrMoreChildren) {
            mostCommon = 2;
        } else if (threeChildren > twoChildren &&
threeChildren > fourOrMoreChildren) {
            mostCommon = 3;
        } else {
            mostCommon = 4;
        }


        System.out.println("Average: " + average + " children
to get at least one of each gender.");
        System.out.println("Number of families with 2
children: " + twoChildren);
        System.out.println("Number of families with 3
children: " + threeChildren);
        System.out.println("Number of families with 4 or more
children: " + fourOrMoreChildren);
        System.out.println("The most common number of children
is " + mostCommon);
    }
}
```

8. OneOfEachStats.java

```
import java.util.Random;
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 totalChildren = 0;
         int experiments = T;

         for (int i = 0; i < T; i++) {
             int count = 0;
             boolean Boy = false;
             boolean Girl = false;

             while (!(Boy && Girl)) {
                 boolean isChildBoy = generator.nextDouble() <
0.5;
                 if (isChildBoy) {
                     Boy = true;
                     System.out.print("b ");
                 } else {
                     Girl = true;
                     System.out.print("g ");
                 }
                 count = count + 1;
             }
```

```
            System.out.println();
            totalChildren += count;
        }

        double average = (double) totalChildren / (double)
experiments;

        double twoChildren = 0;
        double threeChildren = 0;
        double fourOrMoreChildren = 0;
        double mostCommon = 0;

        for (int i = 0; i < T; i++) {
            int count = 0;
            boolean Boy = false;
            boolean Girl = false;

            while (!(Boy && Girl)) {
                boolean isChildBoy = generator.nextDouble() <
0.5;
                if (isChildBoy) {
                    Boy = true;
                } else {
                    Girl = true;
                }
                count = count + 1;
            }

            if (count == 2) {
                twoChildren++;
            } else if (count == 3) {
```

```
                threeChildren++;
            } else {
                fourOrMoreChildren++;
            }
        }

        if (twoChildren > threeChildren && twoChildren >
fourOrMoreChildren) {
            mostCommon = 2;
        } else if (threeChildren > twoChildren &&
threeChildren > fourOrMoreChildren) {
            mostCommon = 3;
        } else {
            mostCommon = 4;
        }

        System.out.println("Average: " + average + " children
to get at least one of each gender.");
        System.out.println("Number of families with 2
children: " + twoChildren);
        System.out.println("Number of families with 3
children: " + threeChildren);
        System.out.println("Number of families with 4 or more
children: " + fourOrMoreChildren);
        System.out.println("The most common number of children
is " + mostCommon);
    }
}
```