```java
/**
 *  Gets a command-line argument (int), and prints all the divisors of
the given number.
 */
public class Divisors {
    public static void main (String[] args) {
        int num = Integer.parseInt(args[0]);
        int i = 1;
        int numRemainder =0;
        while (i <= num){
            numRemainder = num % i;
            if(numRemainder == 0){
                System.out.println(i);
            }
        i = i + 1;
        }
    }
}
```

```java
/**
 * Prints a given string, backward. Then prints the middle character
in the string.
 * The program expects to get one command-line argument: A string.
 */
public class Reverse {
    public static void main (String[] args){
        String s = args[0];
        int length = s.length();
        int i = length - 1;
        String reversed = "";
        while(i >= 0){
            reversed = reversed + s.charAt(i);
            i = i - 1;
        }
        System.out.println(reversed);
        if(length % 2 ==0){
                System.out.println("The middle character is " +
s.charAt((length / 2 - 1)));
        }
        else{
            System.out.println("The middle character is " +
s.charAt((length / 2)));
        }
    }
}
```

```java
/**
 *  Generates and prints random integers in the range [0,10),
 *  as long as they form a non-decreasing sequence.
 */
public class InOrder {
    public static void main (String[] args) {
        int randNumber = (int)(Math.random() * 10); // main random
number that will update each loop
        int lastNumber = randNumber; // the previous random number
        String str = "" + randNumber; // empty string
        while (randNumber >= lastNumber){ // while the main random
number is bigger or equal to the previous random
                lastNumber = randNumber; // set the previous number as
the main one that generated
                randNumber = (int)(Math.random() * 10); // generate a
new random number as the main one
                if (randNumber < lastNumber) { // check if the new
main is smaller than the previous one
                    randNumber = -1; // to stop the while loop
                }
                else {
                    str = str + " " + randNumber; // if the new random
is bigger the previous one, add the number to the string with a space
between
                }
            }
        System.out.println(str); // the while stopped, which means the
new random was smaller than the previous one, what caused it to stop
and print the generated string
    }
}
```

```java
/**
 *  Gets a command-line argument (int), and chekcs if the given number
is perfect.
 */
public class Perfect {
    public static void main (String[] args) {
        int num = Integer.parseInt(args[0]);
        int sumOfDivisors = 1;
        int numRemainder = 0;
        int i = 2;
        String str = num + " is a perfect number since " + num + " =
1";
        while (i < num){
            numRemainder = num % i;
            if(numRemainder == 0){
                sumOfDivisors = sumOfDivisors + i;
                str = str + " + " + i;
            }
        i = i + 1;
        }
        if (sumOfDivisors == num) {
        System.out.println(str);
        }
        else{
        System.out.println(num + " is not a perfect number");
        }
    }
}
```

```java
/**
 *  Gets a command-line argument n (int), and prints an n-by-n damka
board.
 */
public class DamkaBoard {
    public static void main(String[] args) {
        int num = Integer.parseInt(args[0]);
        int i = 2;
        int q = 2;
        String damkaRow = "*";
        while (i <= num) {
            damkaRow = damkaRow + " *";
            i = i +1;
        }
        while (q <= num + 1){
            if(q % 2 == 0){
                System.out.println(damkaRow + " ");
            }
            else {
                System.out.println(" " + damkaRow);
            }
            q = q + 1;
        }

    }
}
```

```java
/**
 *  Simulates the formation of a family in which the parents decide
 *  to have children until they have at least one child of each
gender.
 */
public class OneOfEach {
    public static void main (String[] args) {
        double rand = Math.random();
        String str = "";
        int boys = 0;
        int girls = 0;
            while(boys <1 || girls <1){
                if(rand < 0.5){
                    boys++;
                    str = str + "b ";
                }
                else{
                    girls++;
                    str = str + "g ";
                }
            rand = Math.random();
            }
        System.out.println(str);
        System.out.println("You Made it... and you now have " + (girls
+ boys) + " children.");
    }
}
```

```
public class OneOfEachStats1 {
    public static void main (String[] args) {
        int T = Integer.parseInt(args[0]);
        int boys, girls, children;
        double averageChildren = 0;
        int couplesWithTwo = 0, couplesWithThree = 0,
couplesWithFourOrMore = 0;
        for (int i=0; i < T; i++){
            boys = girls = 0;
            while(boys <1 || girls <1){
                double rand = Math.random();
                if(rand < 0.5){
                    boys++;
                }
                else{
                    girls++;
                }
            }
            children = boys + girls;
            if ((boys + girls) == 2) couplesWithTwo++;
            if ((boys + girls) == 3) couplesWithThree++;
            if ((boys + girls) >= 4) couplesWithFourOrMore++;
            averageChildren += children;
        }
            int mostCommon =
Math.max(couplesWithTwo,Math.max(couplesWithThree,
couplesWithFourOrMore));
            averageChildren /= T;
        System.out.println("Average: " + averageChildren + " children
to get at least one of each gender.");
        System.out.println("Number of families with 2 children: " +
couplesWithTwo);
        System.out.println("Number of families with 3 children: " +
couplesWithThree);
        System.out.println("Number of families with 4 or more
children: " + couplesWithFourOrMore);
        if (mostCommon == couplesWithTwo) System.out.println("The most
common number of children is 2.");
        else if (mostCommon == couplesWithThree)
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.");
    }
}
```

```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 boys, girls, children;
        double averageChildren = 0;
        int couplesWithTwo = 0, couplesWithThree = 0,
couplesWithFourOrMore = 0;
        for (int i=0; i < T; i++){
            boys = girls = 0;
            while(boys <1 || girls <1){
                double rand = generator.nextDouble();
                if(rand < 0.5){
                    boys++;
                }
                else{
                    girls++;
                }
            }
            children = boys + girls;
            if ((boys + girls) == 2) couplesWithTwo++;
            if ((boys + girls) == 3) couplesWithThree++;
            if ((boys + girls) >= 4) couplesWithFourOrMore++;
            averageChildren += children;
        }
            int mostCommon =
Math.max(couplesWithTwo,Math.max(couplesWithThree,
couplesWithFourOrMore));
            averageChildren /= T;
        System.out.println("Average: " + averageChildren + " children
to get at least one of each gender.");
        System.out.println("Number of families with 2 children: " +
couplesWithTwo);
        System.out.println("Number of families with 3 children: " +
couplesWithThree);
        System.out.println("Number of families with 4 or more
children: " + couplesWithFourOrMore);
        if (mostCommon == couplesWithTwo) System.out.println("The most
common number of children is 2.");
        else if (mostCommon == couplesWithThree)
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.");
    }
```