```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]);
        // loop which prints the divisors of num
        for (int i = 1; i < num + 1; i++ ){
            if (num % i == 0) {
                System.out.println(i);
            }
        }
    }
}
```

```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 word = args[0];
        String reverse_Order = "";
        // creating a new string with reverse_Order

        for (int i = word.length() - 1; i >= 0; i-- ){
            reverse_Order = reverse_Order + word.charAt(i);
        }
        System.out.println(reverse_Order);

        if (word.length() % 2 == 0) {
            char middle = word.charAt((word.length() / 2) - 1);
            System.out.println("The middle character is " + middle );
        }
        else {
            char middle = word.charAt(((word.length() + 1) / 2) -1);
            System.out.println("The middle character is " + middle );
        }
    }
}
```

```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 num1 = (int) (Math.random() * 10);
        // print first number
        System.out.print(num1 + " ");

        boolean non_decreasing = false;

        while (non_decreasing == false){
            // compare between two number
            int num2 = (int) (Math.random() * 10);
            if(num1 <= num2){
                System.out.print(num2 + " ");
                num1 = num2;
            }
            else{
                non_decreasing = true;
            }

        }
    }
}
```

```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]);

        for(int i1 = 0; i1 < num; i1++){
            for(int i2 = 0; i2 < num; i2++){
                if(i1 % 2 == 0){
                    System.out.print("* ");
                }
                else {
                    System.out.print(" *");
                }
            }
            System.out.println();
        }
    }
}
```

```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]);

        String print = num + " is a perfect number since " + num + " = 1" ;
        // calculate the sum of the divisors
        int sum = 1;
        // every number divide by one, so we start counting from two and so
on...
        for (int i = 2; i < num; i++){
            if (num % i == 0){
                sum = sum + i;
                print = print + " + " + i;
            }
        }
        // if the sum of the divisors is equal to the number - print perfect,
else print not perfect
        if(sum == num){
            System.out.println(print);
        }
        else{
            System.out.println(num + " is not a perfect number ");
        }




    }
}
```

```java
import java.util.Random;
/**
 *  Computes some statistics about families in which the parents decide
 *  to have children until they have at least one child of each gender.
 *  The program expects to get two command-line arguments: an int value
 *  that determines how many families to simulate, and an int value
 *  that serves as the seed of the random numbers generated by the program.
 *  Example usage: % java OneOfEachStats 1000 1
 */
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 twoChildren = 0;
        int threeChildren = 0;
        int fourOrMoreChildren = 0;
        // count the number of born children
        double count = 0;


        for(int i = 0; i < T; i++){
            boolean boy = false;
            boolean girl = false;
            int numOfChildren = 0;
            while (girl == false || boy == false) {
                // random a number and decides weather its a boy or a girl
                double random_human = generator.nextDouble();
                // add human that were born
                count += 1;

                if (random_human >= 0.5){
                    boy = true;
                    numOfChildren += 1;
                }
                else{
                    girl = true;
                    numOfChildren+= 1;
                }
            }
            // add 1 to the correct group of children
            if(numOfChildren == 2){
                twoChildren += 1;
            }
            else if (numOfChildren == 3){
                threeChildren += 1;
```

```
            }
            else{
                fourOrMoreChildren += 1;
            }
        }
        // print the average children in family

        double average = count / T;

        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);

        // find  what is the most commom number of children in familys and
prints them
        int max = (Math.max(twoChildren, threeChildren));
        max = Math.max(max, fourOrMoreChildren);

        if(max == twoChildren){
            System.out.println("The most common number of children is 2.");
        }
        else if(max == threeChildren){
            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");
        }
    }
}
```