

```

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

        //((-1 * n)%i)==0
        }
}

```

```

/**
 * 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)
    {
        // Gets n from the user
        String str = (args[0]);
        char letter = '4';
        char middle = '4';
        String reverseWord = "";
        for ( int i = 0; i < str.length() ; i++ )
        {
            letter = str.charAt(str.length() -1 -i);
            reverseWord = reverseWord + letter;
            // first for odd second for even
            // if (((str.length()-i-1) == i)||((str.length()-i) == i)
            if (((str.length()-i-1) == i)||((str.length()-i) == i)
            {
                middle = letter;
            }

        }

        System.out.println(reverseWord);
        System.out.println("The middle character is " + middle);

    }
}

```

```
/**
 * 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 a = (int)( 10 * Math.random() ) ;
        System.out.print(a + " ");
        int b = (int)( 10 * Math.random() ) ;
        while (a<b)
        {
            System.out.print(b + " ");
            a = b;
            b = (int)( 10 * Math.random() ) ;
        }
    }
}
```

```

/**
 * Gets a command-line argument (int), and chekcs if the given number is
 perfect.
 */
public class Perfect {
    public static void main (String[] args) {
        int N = Integer.parseInt(args[0]);
        int sum = 0;
        String isPerfect= N + " is a perfect number since " + N + " = 1";
        for ( int i = 2; i < N; i++ )
        {
            if (N%i==0)
            {
                sum +=i;
                isPerfect += " + " + i;
            }

        }

        if (sum + 1 == N)
            System.out.println(isPerfect);
        else
            System.out.println(N + " is not a perfect number");

    }
}

```

```

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]);
        // Initializes a random numbers generator with the given seed
value
        Random generator = new Random(seed);

        boolean boy = false;
        boolean girl = false;
        int sum = 0;//children in each family
        int sum2 = 0;
        int sum3 = 0;
        int sum4 = 0;
        double a = 0;
        int allChildren = 0;//all the children
        String common = "wrong";

        for (int i =0 ; i< T ; i++)
        {

            while (boy == false || girl == false )
            {
                if ( generator.nextDouble() < 0.5)
                    boy = true;

                else
                    girl = true;

                sum +=1;

                //allChildren ++;

            }
            allChildren = allChildren+sum;

            if (sum>= 4)

```

```

        sum4 ++;
    else
    {
        if(sum == 2)
            sum2 ++;
        else
            sum3++;
    }

    boy = false;
    girl = false;
    sum = 0;

}

if ((sum4>sum2)&&(sum4>sum3))
    common = "4 or more";
else
{
    if (((sum3>sum2)&&(sum3>sum4)) || ((sum3>sum2)&&
(sum3==sum4)) )
        common = "3";
    else
    {
        common = "2";
    }
}

// double average = allChildren/T;
System.out.println("Average: " + (double) allChildren / T + "
children to get at least one of each gender.");
System.out.println("Number of families with 2 children: " +
sum2);
System.out.println("Number of families with 3 children: " +
sum3);
System.out.println("Number of families with 4 or more children: "
+ sum4);
System.out.println("The most common number of children is " +
common + ".");

```

like:
 //// In the previous version of this program, you used a statement

```
value.    /// double rnd = Math.random();
          /// Where "rnd" is the variable that stores the generated random

          /// In this version of the program, replace this statement with:
          /// double rnd = generator.nextDouble();
          /// This statement will generate a random value in the range

[0,1),    /// just like you had in the previous version, except that the
          /// randomization will be based on the given seed.
          /// This is the only change that you have to do in the program.

        }
    }
```