```
/**
 *  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]);
          for(int i = 1;i<=num; i++)
          {
               if(num % i == 0)
               {
                    System.out.println(i);
               }
          }

     }
}
```

```
/**
 * 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];
           for(int i = s.length()-1; i >= 0; i--)
           {
                 System.out.print(s.charAt(i));
           }
           int middle = (s.length() - 1) / 2;
           char middleChar = s.charAt(middle);
           System.out.println("\nThe middle character is " +
middleChar);
      }
}
```

```
/**
 *  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 random = (int)(Math.random() * 10);
           int randomNext = (int)(Math.random() * 10);
           System.out.print(random + " ");
;
           while(randomNext > random)
           {
                System.out.print(randomNext + " ");
                random = randomNext;
                randomNext = (int)(Math.random() * 10);

           }

     }
}
```

```
/**
 *  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 sum = 0;
            String addingStr = " = ";
            for(int i = 1;i<num; i++)
            {
                  if(num % i == 0)
                  {
                        sum += i;
                        addingStr += i + " + ";
                  }
            }

            if(sum == num)
            {
                  addingStr = addingStr.substring(0,addingStr.length()-
2);
                  System.out.println(num + " is a perfect number since
"+ num + addingStr);

            }
            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 = 0;

        while(i < num)
        {
            int j = 0;
            while(j < num*2)
            {
                if(i % 2 == 0)
                {
                    if(j % 2 == 0)
                        System.out.print("*");

                    else System.out.print(" ");
                }
                else {
                    if(j % 2 == 0)
                        System.out.print(" ");

                    else System.out.print("*");
                }
                j++;
            }
            System.out.println();
            i++;

        }
    }
}
```

```
public class OneOfEach {
      public static void main (String[] args) {

            String gender;
            String wantedGender;
            int kids = 1;
            int random = (int)(Math.random() * 10);
            if(random >= 5)
            {
                  gender = "g";
                  wantedGender = "b";
            }
            else
            {
                  gender = "b";
                  wantedGender = "g";

            }

            System.out.print(gender + " ");

            while(!gender.equals(wantedGender))
            {
                  random = (int)(Math.random() * 10);
                  kids++;
                  if(random >= 5)
                  {
                        gender = "g";
                  }
                  else
```

```java
public class OneOfEachStats1 {
	public static void main (String[] args) {

		int num = Integer.parseInt(args[0]);
		String gender;
		String wantedGender;
		int count2 = 0;
		int count3 = 0;
		int count4Plus = 0;
		int sumOfIterations = 0;
		for(int i =0; i < num; i++)
		{
			int kids = 1;
			int random = (int)(Math.random() * 10);
			if(random >= 5)
			{
				gender = "g";
				wantedGender = "b";
			}
			else
			{
				gender = "b";
				wantedGender = "g";

			}

			//System.out.print(gender + " ");

			while(!gender.equals(wantedGender))
			{
				random = (int)(Math.random() * 10);
				kids++;
				if(random >= 5)
				{
					gender = "g";
				}
				else
				{
					gender = "b";
				}

				//System.out.print(gender + " ");
			}
			if(kids == 2)
				count2++;
```

```
                 else if(kids == 3)
                      count3++;

                 else count4Plus++;

                 sumOfIterations += kids;
                 //System.out.println();
                 //System.out.println(sumOfIterations);
           }


           double avarage = ((double)sumOfIterations)/num;

           System.out.println("Average: " + avarage + " children to get
at least one of each gender." );
           System.out.println("Number of families with 2 children: " +
count2);
           System.out.println("Number of families with 3 children: " +
count3);
           System.out.println("Number of families with 4 or more
children: " + count4Plus);

           String maxKids;
           if(Math.max(count2, Math.max(count3, count4Plus))== count2)
           {
                 maxKids = "2.";
           }
           else if(Math.max(count2, Math.max(count3, count4Plus))==
count3)
           {
                 maxKids = "3.";
           }
           else
           {
                 maxKids = "4 or more.";
           }

           System.out.println("The most common number of children is "
+ maxKids);

      }
}
```

```
                 {
                      gender = "b";
                 }

                 System.out.print(gender + " ");
           }

           System.out.println("\nYou made it... and you now have "+
kids + " children");

     }
}
```

```
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 num = 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);

           //// In the previous version of this program, you used a 
statement like:
           //// double rnd = Math.random();
           //// Where "rnd" is the variable that stores the generated 
random value.
           //// 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.
           String gender;
           String wantedGender;
           int count2 = 0;
           int count3 = 0;
           int count4Plus = 0;
           int sumOfIterations = 0;
           for(int i =0; i < num; i++)
           {
                int kids = 1;
```

```
            int random = (int)(generator.nextDouble() * 10);
            if(random >= 5)
            {
                gender = "g";
                wantedGender = "b";
            }
            else
            {
                gender = "b";
                wantedGender = "g";

            }

            //System.out.print(gender + " ");

            while(!gender.equals(wantedGender))
            {
                random = (int)(generator.nextDouble() * 10);
                kids++;
                if(random >= 5)
                {
                    gender = "g";
                }
                else
                {
                    gender = "b";
                }

                //System.out.print(gender + " ");
            }
            if(kids == 2)
                count2++;

            else if(kids == 3)
                count3++;

            else count4Plus++;

            sumOfIterations += kids;
            //System.out.println();
            //System.out.println(sumOfIterations);
        }


        double avarage = ((double)sumOfIterations)/num;
```

```
            System.out.println("Average: " + avarage + " children to get 
at least one of each gender." );
            System.out.println("Number of families with 2 children: " + 
count2);
            System.out.println("Number of families with 3 children: " + 
count3);
            System.out.println("Number of families with 4 or more 
children: " + count4Plus);

            String maxKids;
            if(Math.max(count2, Math.max(count3, count4Plus))== count2)
            {
                  maxKids = "2.";
            }
            else if(Math.max(count2, Math.max(count3, count4Plus))== 
count3)
            {
                  maxKids = "3.";
            }
            else
            {
                  maxKids = "4 or more.";
            }

            System.out.println("The most common number of children is " 
+ maxKids);


      }
}
```