/\*\*

\* 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 x = Integer.parseInt(args[0]);

for (int i = 1; i <= x; i++){

if (x%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];

String r = ""; //r for reverse

for (int i = 0; i < s.length(); i++){

r = s.charAt(i) + r;

}

System.out.println(r);

System.out.println("The middle character is " + r.charAt(r.length()/2));

}

}

/\*\*

\* 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 nr = (int)(10 \* Math.random()); //nr stands for new random

int r = 0; // r stands for random

do{

r = nr;

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

nr = (int)(10 \* Math.random());

} while (nr >= r);

System.out.println();

}

}

/\*\*

\* 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 a = 1;

String s = "1";

for (int i = 2; i <= N/2; i++){

if (N%i==0){

s = s + " + " + i;

a = a + i;

}

}

if (a==N)

System.out.println(N + " is a perfect number since "+ N + " = "+s);

else

System.out.println(N + " is not a perfect number");

}

}

/\*\*

\* 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 n = Integer.parseInt(args[0]);

for (int i=1; i<=n; i++){

for (int j=1; j<=n;j++){

if (i%2==0)

System.out.print(" \*");

else

System.out.print("\* ");

}

System.out.println();

}

}

}

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 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.

int T = Integer.parseInt(args[0]);

int twoChildren = 0;

int threeChildren = 0;

int fourOrMoreChildren = 0;

Double childrens = 0.0;

for (int i=1;i<=T;i++){

int num = 0;

double child = generator.nextDouble();

num++;

boolean boy = (child<=0.5);

boolean girl = (child>0.5);

while (boy){

child = generator.nextDouble();

num++;

if (child>0.5){

boy = false;

}

}

if (num==1){

while (girl){

child = generator.nextDouble();

num++;

if (child<=0.5){

girl = false;

}

}

}

childrens += num;

if (num==2){

twoChildren++;

}

else if (num==3) {

threeChildren++;

}

else {

fourOrMoreChildren ++;

}

}

System.out.println("Average: " + childrens/T + " 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);

if (twoChildren >= threeChildren && twoChildren >= fourOrMoreChildren)

System.out.println("The most common number of children is 2.");

else if (twoChildren < threeChildren && threeChildren >= fourOrMoreChildren)

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.");

}

}