**Homework Week 2 Code**

Exercise 1

public class Divisors {  
 public static void main(String[] args) {  
 int a = Integer.*parseInt*(args[0]);  
 int divisor = 1;  
 while (divisor <= a) {  
 if (a % divisor == 0) {  
 System.*out*.println(divisor);  
 }  
 divisor++;  
 }  
 }  
}

Exercise 2

public class Reverse {  
 public static void main (String[] args) {  
 String a = (args[0]);  
 String flip = "";  
 int l = a.length();  
 for (int i = (l-1) ; i == 0 ; i--){  
 flip = flip + a.charAt(i);  
 }  
 char b;  
 b = flip.charAt((flip.length()-1)/2);  
 System.*out*.println(flip);  
 System.*out*.println("The middle character is" + b);  
 }  
 }

Exercise 3

public class InOrder {  
 public static void main (String[] args) {  
 int x = 0;  
 int y = (int)(Math.*random*() \* 10);  
 while (y >= x) {  
 System.*out*.println(y);  
 x = y;  
 y = (int)(Math.*random*() \* 10);  
 }  
 }  
}

Exercise 4

public class Perfect {  
 public static void main (String[] args) {  
 int a = Integer.*parseInt*(args[0]);  
 int divisor = a - 1;  
 int sum = 0;  
 String AllDivisor = "";  
 while (divisor > 0){  
 if (a % divisor == 0) {  
 if (AllDivisor != ""){  
 AllDivisor = AllDivisor + "+";  
 }  
 sum = sum + divisor;  
 AllDivisor = AllDivisor + divisor;  
 }  
 divisor = divisor - 1;  
 }  
 if (sum == a){  
 System.*out*.println(a + " is a perfect number since " + a + "=" + AllDivisor);  
 }  
 else{  
 System.*out*.println(a + " is not a perfect number");  
 }  
 }  
}

Exercise 5

public class DamkaBoard {  
 public static void main(String[] args) {  
 int damka = Integer.*parseInt*(args[0]);  
 int count = 0;  
 for (int i = damka; i != 0; i--) {  
 System.*out*.println();  
 if (count % 2 != 0) {  
 System.*out*.print(" ");  
 }  
 for (int j = damka; j != 0; j--) {  
 System.*out*.print("\* ");  
 }  
 count ++;  
 }  
 }  
}

Exercise 6

public class OneOfEach {  
 public static void main (String[] args) {  
 boolean girl = false;  
 boolean boy = false;  
 int count = 0;  
 String children = "";  
 while ((girl == false) || (boy == false)) {  
 double rnd = (double)Math.*random*();  
 if (rnd < 0.5) {  
 boy = true;  
 children = children + "b ";  
 }  
 else {  
 girl = true;  
 children = children + "g ";  
 }  
 count++;  
 }  
 System.*out*.println(children);  
 System.*out*.println("You made it... and you now have " + count + " children");  
 }  
}

Exercise 7

public class OneOfEachStats1 {  
 public static void main(String[] args) {  
 int T = Integer.*parseInt*(args[0]);  
 boolean girl = false;  
 boolean boy = false;  
 int count = 0;  
 double totalchildrencount = 0.0;  
 int f2 = 0;  
 int f3 = 0;  
 int f4 = 0;  
 for (int i = 0; i < T; i++) {  
 while ((girl == false) | (boy == false)) {  
 double rnd = (double) Math.*random*();  
 if (rnd < 0.5) {  
 boy = true;  
 } else {  
 girl = true;  
 }  
 count++;  
 totalchildrencount++;  
 }  
 if (count == 2) f2++;  
 else if (count == 3) f3++;  
 else f4++;  
 count = 0;  
 boy = false;  
 girl = false;  
 }  
 int common = 0;  
 if ((f2 >= f3) && (f2 >= f4)) common = f2;  
 else if (f3 >= f4) common = f3;  
 else common = f4;  
 System.*out*.println("Average: " + (totalchildrencount / T) + " children to get at least one of each gender.");  
 System.*out*.println("Number of families with 2 children: " + f2);  
 System.*out*.println("Number of families with 3 children: " + f3);  
 System.*out*.println("Number of families with 4 or more children: " + f4);  
 if ((f2 >= f3) && (f2 >= f4)) {  
 System.*out*.println("The most common number of children is 2.");  
 }  
 }  
}

Exercise 8

public class OneOfEachStats {  
 public static void main (String[] args) {  
 int T = Integer.*parseInt*(args[0]);  
 int seed = Integer.*parseInt*(args[1]);  
 boolean girl = false;  
 boolean boy = false;  
 int count = 0;  
 double totalchildrencount = 0.0;  
 int f2 = 0;  
 int f3 = 0;  
 int f4 = 0;  
 Random generator = new Random(seed);  
 for (int i = 0; i < T; i++) {  
 while ((girl == false) | (boy == false)) {  
 double rnd = generator.nextDouble();  
 if (rnd <= 0.5) {  
 boy = true;  
 } else {  
 girl = true;  
 }  
 count++;  
 totalchildrencount++;  
 }  
 if (count == 2) f2++;  
 else if (count == 3) f3++;  
 else f4++;  
 count = 0;  
 boy = false;  
 girl = false;  
 }  
 int common = 0;  
 if ((f2 >= f3) && (f2 >= f4)) common = f2;  
 else if (f3 >= f4) common = f3;  
 else common = f4;  
 System.*out*.println("Average: " + (totalchildrencount / T) + " children to get at least one of each gender.");  
 System.*out*.println("Number of families with 2 children: " + f2);  
 System.*out*.println("Number of families with 3 children: " + f3);  
 System.*out*.println("Number of families with 4 or more children: " + f4);  
 if ((f2 >= f3) && (f2 >= f4)) {  
 System.*out*.println("The most common number of children is 2.");  
 }  
 }  
}