**1. Divisors**

```
public class Divisors
{
  public static void main(String[] args)
   {
//    Declares integer
   int num = Integer.parseInt ( args[0] );
   for ( int i = 1; i <= num; i ++ )
   {
         //checks is it a divisor
   if ( num % i == 0 )
   System.out.println( i );
   }
   }
}
```

**2. Reverse**

```
public class Reverse
{
  public static void main(String[] args)
{
//   Declares Strings
         String original = args;0] ;
         String reversed ="";
         int middle = original.length() / 2;
         for (int i = original.length() - 1 ; i >= 0; i-- )
{
               //builds the string reversed
               reversed += original.charAt ( i );
         {
         System.out.println ( reversed );
         System.out.println ( "The middle character is " +
reversed.charAt ( middle ) );
         }
               }
```

**3. InOrder**

```
public class InOrder
{
    public static void main(String[] args)
   {
         //generates the first number that should be printed
anyway
   int firstNum = (int) ( Math.random()* 10 );
   System.out.print (firstNum);
   // generates the next number
   int randomNum = (int) ( Math.random()* 10 );
   while ( firstNum <= randomNum )
   {
         System.out.print ( " "+ randomNum );
         // saves the last number for the next check of the loop
         firstNum = randomNum;
         //generates new number
         randomNum = (int) ( Math.random()* 10 );
   }
   }
}
```

**4. Perfect**

```
public class Perfect
{
  public static void main(String[] args)
   {
   // Declares integer
   int num = Integer.parseInt ( args[0] );
   String endOfProgram = ( num + " is a perfect number since " +
num + " = 1" );
   //every number can be divided by 1
   int sum = 1;
   for ( int i = 2; i < num; i ++ )
   {
         //checks is it a divisor
   if ( num % i == 0 )}
         endOfProgram += " + " + i;
         //in order to see if it equals
         sum += i;
   }
   }
   if ( sum == num )
         System.out.println ( endOfProgram );
   else
         System.out.println ( num + " is not a perfect number" );
   }
}
```

**5. DamkaBoard**

```
public class DamkaBoard
{
  public static void main(String[] args)
   {
   //Declares integer
   int n = Integer.parseInt ( args[0] );
   for ( int i = 0; i < n; i++ )
   {
         if ( i % 2 == 0 )
         {
               System.out.print;("*")
         }
         //every second row starts with space
         for ( int j = 0; j < n-1; j++ )
         {
               System.out.print;("* ")
         }
         //next row
         if ( i % 2 == 1 )
               System.out.print;("* ")
               else
               System.out.print;("")
         System.out.println;()
   }
}
}
```

## 6. OneOfEach

```
public class OneOfEach
{
  public static void main(String[] args)
   {
   boolean isGirl = false;
   boolean isBoy = false;
   int count = 0;
   while ( !isBoy || !isGirl )
   {
         //the int will be 1 or 0
   int random = (int) ( Math.random () + 0.5 );
   if ( random == 1 ){
         isGirl = true;
         System.out.print ( "g " );
   }
   else{
         isBoy = true;
         System.out.print ( "b " );
   }
   //counts the amount of children
   count;++
   }
   System.out.println ( " You made it... and now you have " +
count + " children." );
   }
   }
```

## 7. OneOfEachStats1

```
public class OneOfEachStats1
{
  public static void main(String[] args)
       {
       //Declares integer
       int T = Integer.parseInt ( args[0] );
       int family2 = 0;
       int family3 = 0;
       int family4orMore = 0;
       double average = 0.0;
       int mostCommon = 0;
       //for each family
       for ( int i = 0; i < T; i ++ )
{
       //each family
       boolean isGirl = false;
       boolean isBoy = false;
       int count = 0;
       while ( isBoy == false || isGirl == false)
       {
             //the int will be 1 or 0
       double
       random = ( Math.random () );
       if ( random < 0.5){
             isGirl = true;
       }
       else
       isBoy = true;
       count;++
       }
```

```
      //adds to the general counts
      if ( count == 2 )
            family2;++
      if ( count == 3 )
            family3;++
      if ( count >= 4 )
            family4orMore;++
      average += count;
}
      average = average / T;
      System.out.println ( "Average: " + average + " children to get
at least one of each gender." );
      System.out.println ( "Number of families with 2 children: " +
family2 );
      System.out.println ( "Number of families with 3 children: " +
family3 );
      System.out.println ( "Number of families with 4 or more
children: " + family4orMore );
      mostCommon = Math.max ( family2, Math.max ( family3,
family4orMore ) );
      if ( mostCommon == family2 )
            System.out.println ( "The most common number of children
is 2." );
      else if ( mostCommon == family3 )
            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." );
}
}
```

## 8. OneOfEachStats (final)

```
import java.util.Random;
public class OneOfEachStats
{
  public static void main(String[] args)
{
       //Declares integer
      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 family2 = 0;
      int family3 = 0;
      int family4orMore = 0;
      double average = 0.0;
      int mostCommon = 0;
       //for each family
      for ( int i = 0; i < T; i ++ )
      {
       //each family
      boolean isGirl = false;
      boolean isBoy = false;
      int count = 0;
      while ( isGirl == false || isBoy == false )
      {
            //the int will be 1 or 0
      double rnd = generator.nextDouble;()
      if ( rnd < 0.5){
            isGirl = true;
      }
```

```
      else
      isBoy = true;
      count;++
}
      //adds to the general counts
      if ( count == 2 )
            family2;++
      if ( count == 3 )
            family3;++
      if (!( count < 4 ) )
            family4orMore;++
      average += count ;
}
      average = average / T;
      System.out.println ( "Average: " + average + " children to get
at least one of each gender." );
      System.out.println ( "Number of families with 2 children: " +
family2 );
      System.out.println ( "Number of families with 3 children: " +
family3 );
      System.out.println ( "Number of families with 4 or more
children: " + family4orMore );
      mostCommon = Math.max ( family2, Math.max ( family3,
family4orMore ) );
      if ( mostCommon == family2 )
            System.out.println ( "The most common number of children
is 2." );
      else if ( mostCommon == family3 )
            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." );
}
}
```