Divisors

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

Reversing a string

```
public class Reverse {
    public static void main (String[] args){
        String s = args[0];
        int l = s.length();
        for (int i = l-1; i >= 0; i--) {
            System.out.print(s.charAt(i));}
        if (l % 2 == 0) {
            System.out.print("\nThe middle character is " +
s.charAt((l - 1) / 2));
        } else {
            System.out.print("\nThe middle character is " +
s.charAt(l / 2));
        }
    }
}
```

Lucky streak

```
public class InOrder {
    public static void main (String[] args) {
        int oldRandom = (int)(10 * Math.random());
        System.out.print(oldRandom);
        int currentRandom = (int)(10 * Math.random());
        while (currentRandom >= oldRandom){
            System.out.print(" " + currentRandom);
            oldRandom = currentRandom;
            currentRandom = (int)(10 * Math.random());
        }
    }
}
```

Perfect Numbers

```
public class Perfect {
    public static void main (String[] args) {
        int n = Integer.parseInt(args[0]);
        int divisors = 2; // we assume 1 is always a divisor
        int sumDivisors = 1;
        String sumDivisorsString = n + " is a perfect number
since " + n + " = " + 1 ;
        while (divisors < n){
            if ( n % divisors == 0) {
                sumDivisors += divisors;
                sumDivisorsString += " + " + divisors;
            }
            divisors++;
        }
        if (n ==
sumDivisors){System.out.println(sumDivisorsString);}
        else {System.out.println(n + " is not a perfect
number");}
    }
}
```

Damka Board

```
public class DamkaBoard {
    public static void main(String[] args) {
        int n = Integer.parseInt(args[0]);
        for (int row = 0; row < n; row++){
            if (row % 2 == 1) {
                System.out.print(" ");
            }
            for (int col = 0; col < n - 1; col++){
                System.out.print("* ");
            }
            if (row % 2 == 0) {
                System.out.println("* ");
            } else {
                System.out.println("*");
            }
        }
    }
}
```

One of Each

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

One of Each Stats

```
public class OneOfEachStats1 {
    public static void main (String[] args) {
        int T = Integer.parseInt(args[0]);
        int child2 = 0;
        int child3 = 0;
        int child4 = 0;
        int maxChild = 0;
        double children = 0;

        for (int i = 0; i < T; i++){
            boolean girl = false;
            boolean boy = false;
            int childInFam = 0;
            while (!boy || !girl){
                double rand = Math.random();
                if (rand <= 0.5) girl = true;
                else boy = true;
                children ++;
                childInFam ++;
            }
            if (childInFam == 2) child2 ++;
            else if (childInFam == 3) child3 ++;
            else if (childInFam >= 4) child4 ++;
        }

        maxChild = (Math.max(child2 , Math.max(child3 , child4)));
        if (maxChild == child2) maxChild = 2;
        else if (maxChild == child3) maxChild = 3;
        else if (maxChild == child4) maxChild = 4;

        System.out.println("Average: " + (children / T) + " children
to get at least one of each gender.");
        System.out.println("Number of families with 2 children: " +
child2);
        System.out.println("Number of families with 3 children: " +
child3);
        System.out.println("Number of families with 4 or more
children: " + child4);
        System.out.println("The most common number of children is "
+ maxChild + ".");
    }
}
```

One of Each Stats (final version)

```
public class OneOfEachStats {
    public static void main (String[] args) {
        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 child2 = 0;
        int child3 = 0;
        int child4 = 0;
        int maxChild = 0;
        double children = 0;

        for (int i = 0; i < T; i++){
            boolean girl = false;
            boolean boy = false;
            int childInFam = 0;
            while (!boy || !girl){
                double rand = generator.nextDouble();
                if (rand <= 0.5) girl = true;
                else boy = true;
                children ++;
                childInFam ++;
            }
            if (childInFam == 2) child2 ++;
            else if (childInFam == 3) child3 ++;
            else if (childInFam >= 4) child4 ++;
        }

        maxChild = (Math.max(child2 , Math.max(child3 , child4)));
        if (maxChild == child2) maxChild = 2;
        else if (maxChild == child3) maxChild = 3;
        else if (maxChild == child4) maxChild = 4;

        System.out.println("Average: " + (children / T) + " children
to get at least one of each gender.");
        System.out.println("Number of families with 2 children: " +
child2);
        System.out.println("Number of families with 3 children: " +
child3);
        System.out.println("Number of families with 4 or more
children: " + child4);
        System.out.println("The most common number of children is "
+ maxChild + ".");
    }
}
```