Divisors

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

Reverse

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

Perfect

```
public class Perfect {
    public static void main (String[] args) {
        int num = Integer.parseInt(args[0]);
        int sum = 0;
        boolean isP = true;
        for(int d = 1; d < num; d++) {
            if (num%d == 0) {
                sum = sum + d;
            }
        }
        if (num == sum) {
            System.out.print (num + " is a perfect number since " +
                              num + " = 1");
            for(int d = 2; d < num; d++) {
                if (num%d == 0) {
                    System.out.print (" + " + d);
                }
            }
        }
        else {
            System.out.println (num + " is not a perfect number");
        }
    }
}
```

DamkaBoard

```java
public class DamkaBoard {
    public static void main(String[] args) {
        int size = Integer.parseInt(args[0]);
        for (int r = 0; r < size; r++) {
            if (r%2 == 0) {
                for (int i = 0; i < size; i++) {
                    System.out.print ("* ");
                }
            } else {
                for (int j = 0; j < size; j++) {
                    System.out.print (" *");
                }
            }
            System.out.println();
        }
    }
}
```

One of Each

```
public class OneOfEach {
    public static void main (String[] args) {
        int cCount = 0;
        boolean girl = false;
        boolean boy = false;
        boolean both = false;
        while (!both) {
            if (Math.random() > 0.5) {
                boy = true;
                System.out.print ("b ");
            } else {
                girl = true;
                System.out.print ("g ");
            }
            cCount++;
            if (boy && girl) {
                both = true;
            }
        }
        System.out.println ("\nYou made it... and you now have " +
                            cCount + " children.");
    }
}
```

OneOfEachStats1

```
public class OneOfEachStats1 {
    public static void main (String[] args) {
        int numOfFamilies = Integer.parseInt(args[0]);
        int c2 = 0;
        int c3 = 0;
        int cMore = 0;
        double avg = 0;
        double avgC = 0;
        for (int i = 0; i < numOfFamilies; i++) {
            int cCount = 0;
            boolean girl = false;
            boolean boy = false;
            boolean both = false;
            while (!both) {
                if (Math.random() > 0.5) {
                    boy = true;
                } else {
                    girl = true;
                }
                cCount++;
                if (boy && girl) {
                    both = true;
                }
            }
            avgC = avgC + cCount;
            if (cCount == 2) {
                c2++;
            } else if (cCount == 3) {
                c3++;
            } else {
                cMore++;
            }
        }
```

```
        avg = (double)(avgC/numOfFamilies);
        System.out.println ("Average: " + avg + " children to get at
                            least one of each gender.");
        System.out.println ("Number of families with 2 children: " +
                             c2);
        System.out.println ("Number of families with 3 children: " +
                             c3);
        System.out.println ("Number of families with 4 or more
                             children: " + cMore);
        if (c2 > cMore || c3 > cMore) {
            if (c2 > c3) {
                System.out.println ("The most common number of
                                     children is 2.");
            } else {
                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.");
        }
    }
}
```

OneOfEachStats (Final)

```java
import java.util.Random;

public class OneOfEachStats {
    public static void main (String[] args) {
        int T = Integer.parseInt(args[0]);
        int seed = Integer.parseInt(args[1]);
        Random generator = new Random(seed);
        int c2 = 0;
        int c3 = 0;
        int cMore = 0;
        double avg = 0;
        double avgC = 0;
        for (int i = 0; i < T; i++) {
            int cCount = 0;
            boolean girl = false;
            boolean boy = false;
            boolean both = false;
            while (!both) {
                if (generator.nextDouble() > 0.5) {
                    boy = true;
                } else {
                    girl = true;
                }
                cCount++;
                if (boy && girl) {
                    both = true;
                }
            }
            avgC = avgC + cCount;
            if (cCount == 2) {
                c2++;
            } else if (cCount == 3) {
                c3++;
```

```
            } else {
                cMore++;
            }
        }
        avg = (double)(avgC/T);
        System.out.println ("Average: " + avg + " children to get at
                             least one of each gender.");
        System.out.println ("Number of families with 2 children: " +
                            c2);
        System.out.println ("Number of families with 3 children: " +
                            c3);
        System.out.println ("Number of families with 4 or more
                            children: " + cMore);
        if (c2 > cMore || c3 > cMore) {
            if (c2 > c3) {
                System.out.println ("The most common number of
                                    children is 2.");
            } else {
                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.");
        }
    }
}
```