

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

```
public class Reverse {
    public static void main(String[] args) {
        String phrase = args[0];
        for (int i = 0; i < phrase.length(); i++) {
            System.out.print(phrase.charAt(phrase.length() - 1 -
i));
        }
        System.out.println();
        char middleChar = phrase.charAt((int) Math.ceil((double)
phrase.length() / 2) - 1);
        System.out.printf("The middle character is %c", middleChar);
    }
}
```

```
public class InOrder {  
    public static void main(String[] args) {  
        int previousNumber = 0;  
        int randomNumber = (int) Math.floor(Math.random() * (10));  
        do {  
            System.out.println(randomNumber);  
            previousNumber = randomNumber;  
            randomNumber = (int) Math.floor(Math.random() * (10));  
        } while (previousNumber < 10 && randomNumber >=  
previousNumber);  
    }  
}
```

```
public class DamkaBoard {
    public static void main(String[] args) {
        int numberOfLines = Integer.parseInt(args[0]);
        for (int i = 0; i < numberOfLines; i++) {
            for (int j = 0; j < numberOfLines; j++) {
                if (i % 2 == 0) { //in even lines, we will start
with *
                    System.out.print("* ");
                } else { // in odd lines, we will start with a space
                    System.out.print(" *");
                }
            }
            System.out.println();
        }
    }
}
```

```
public class Perfect {
    public static void main(String[] args) {
        int number = Integer.parseInt(args[0]);
        String perfectString = String.format("%d is a perfect number
since %d = 1", number, number);
        int divisorsSum = 1; // 1 is always a divisor of any integer
        for (int i = 2; i < number; i++) {
            if (number % i == 0) { // if i is a divisor of number
                divisorsSum += i;
                perfectString += " + " + i;
            }
        }
        if (divisorsSum == number) {
            System.out.printf(perfectString);
        } else {
            System.out.printf("%d is not a perfect number", number);
        }
    }
}
```

```
public class OneOfEach {
    public static void main(String[] args) {
        boolean isBoy = false, isGirl = false;
        int childrenCount = 0;
        while (!isBoy || !isGirl) { // keep having babies until you
have both a boy and a girl
            double randomValue = Math.random();
            if (randomValue < 0.5) { //then we say it's a boy
                isBoy = true;
                System.out.print("b ");
            } else { // then we say it's a girl
                isGirl = true;
                System.out.print("g ");
            }
            childrenCount++;
        }
        System.out.println();
        System.out.printf("You made it... and you now have %d
children", childrenCount);
    }
}
```

```

public class OneOfEachStats1 {
    public static void main(String[] args) {
        int T = Integer.parseInt(args[0]);
        int twoChildren = 0, threeChildren = 0, fourPlusChildren =
0;

        int totalChildren = 0;
        for (int i = 0; i < T; i++) {
            //an experiment
            boolean isBoy = false, isGirl = false;
            int childrenCount = 0;
            while (!isBoy || !isGirl) { // keep having babies until
you have both a boy and a girl
                double randomValue = Math.random();
                if (randomValue < 0.5) { //then we say it's a boy
                    isBoy = true;
                } else { // then we say it's a girl
                    isGirl = true;
                }
                childrenCount++;
            }
            //after the experiment
            totalChildren += childrenCount;
            if (childrenCount == 2) {
                twoChildren++;
            } else if (childrenCount == 3) {
                threeChildren++;
            } else {
                fourPlusChildren++;
            }
        }
        System.out.println("Average: " + (double) totalChildren / 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: " + fourPlusChildren);
        String mostCommonChildren = "4 or more.";
        if (twoChildren >= threeChildren && twoChildren >=
fourPlusChildren) {
            mostCommonChildren = "2.";
        } else if (threeChildren >= twoChildren && threeChildren >=
fourPlusChildren) {
            mostCommonChildren = "3.";
        }
        System.out.println("The most common number of children is "
+ mostCommonChildren);
    }
}

```

```
}  
}
```



```

public class OneOfEachStats {
    public static void main (String[] args) {
        // Gets the two command-line arguments
        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 twoChildren = 0, threeChildren = 0, fourPlusChildren = 0;
        int totalChildren = 0;
        for (int i = 0; i < T; i++) {
            //an experiment
            boolean isBoy = false, isGirl = false;
            int childrenCount = 0;
            while (!isBoy || !isGirl) { // keep having babies until
you have both a boy and a girl
                double randomValue = generator.nextDouble();
                if (randomValue < 0.5) { //then we say it's a boy
                    isBoy = true;
                } else { // then we say it's a girl
                    isGirl = true;
                }
                childrenCount++;
            }
            //after the experiment
            totalChildren += childrenCount;
            if (childrenCount == 2) {
                twoChildren++;
            } else if (childrenCount == 3) {
                threeChildren++;
            } else {
                fourPlusChildren++;
            }
        }
        System.out.println("Average: " + (double)totalChildren / 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: " + fourPlusChildren);
        String mostCommonChildren = "4 or more.";
        if (twoChildren >= threeChildren && twoChildren >=
fourPlusChildren){
            mostCommonChildren = "2.";
        } else if (threeChildren >= twoChildren && threeChildren >=
fourPlusChildren) {
            mostCommonChildren = "3.";
        }
    }
}

```

```
    }  
    System.out.println("The most common number of children is " +  
mostCommonChildren);  
  
    }  
}
```