

```
package com.mycompany.mathoperationsapp;
import java.util.*;
public class Calculator {
    public int add(int a,int b){
        return a+b;
    }
    public int subtract(int a,int b){
        return a-b;
    }
    public int multiply(int a,int b){
        return a*b;
    }
    public double divide(int a,int b){
        if(b!=0){
            return a/b;
        }else{
            System.out.println("Cannot divide by zero!");
            return Double.NaN;
        }
    }
}
public class MathUtils {
    public double calculateSquareRoot(double num) {
        if(num>=0){
            return Math.sqrt(num);
        }else{
            System.out.println("Cannnot calculate square root of a negative number!");
            return Double.NaN;
        }
    }
}
public class MathOperationsApp {
    public static void main(String[] args) {
        math_operations.Calculator calculator = new math_operations.Calculator();
        math_operations.MathUtils mathUtils = new math_operations.MathUtils();
        System.out.println("Addition:"+calculator.add(5,3));
        System.out.println("Subtraction: "+ calculator.subtract(8, 4));
        System.out.println("Multiplication: " + calculator.multiply(2, 6));
        System.out.println("Division: "+ calculator.divide(10, 2));
        System.out.println("Square Root of 25: " + mathUtils.calculateSquareRoot(25));
        System.out.println("Square Root of -9: " + mathUtils.calculateSquareRoot(-9));
    }
}
```

```
import java.util.*;
public class Prg14 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter a number");
        int num = sc.nextInt();
        if(num % 3 == 0 && num % 5 == 0){
            System.out.println("Number is divisible by both 3 and 5"); }else
        if(num % 3 == 0 && num % 5 != 0 ){
            System.out.println("Number is divisible by 3 and not by 5"); }else
        if(num % 3 != 0 && num % 5 == 0 ){
            System.out.println("Number is divisible by 5 and not by 3");
        }else{
            System.out.println("The number is neither divisible by 5 nor by 3");
        }
    }
}
```

Output - Run (prg14) ×

```
--- exec:3.5.1:exec (default-cli) @ prg14 ---
Enter a number
345
Number is divisible by both 3 and 5
-----
BUILD SUCCESS
-----
Total time: 9.109 s
```

```
import java.util.*;
public class Prg15 {

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter a year");
        int year = sc.nextInt();
        if(year % 4 == 0 && year %100 != 0){
            System.out.println("The year is a leap year");
        }else if(year % 4 == 0 && year %100 == 0){
            System.out.println("The year is a Century leap year");
        }else if(year % 4 != 0 && year %100 == 0){
            System.out.println("The year is a Century year");
        }else{
            System.out.println("The year is neither a Century year nor a Leap year.");
        }
    }
}
```

Output - Run (prg15) ×

```
--- exec:3.5.1:exec (default-cli) @ prg15 ---
Enter a year
2007
The year is neither a Century year nor a Leap year.

-----
BUILD SUCCESS
-----
Total time: 13.481 s
```

```
import java.util.*;
public class Prg16 {

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter two positive numbers"); int a = sc.nextInt();
        int b = sc.nextInt();
        if(a < 0 || b < 0){
            System.out.println("Square root of negative numbers cannot be determined");
        }else{
            double sqrtA = Math.sqrt(a);
            double sqrtB = Math.sqrt(b);
            double c = sqrtA - Math.floor(sqrtA);
            double d = sqrtB - Math.floor(sqrtB);
            if(c == 0 && d ==0){
                System.out.println("The numbers are perfect squares");
            }else if(c == 0 && d != 0 ){
                System.out.println(a+" is a Perfect Square"+ "\n" +b+" is not a Perfect Square");
            }else if(c != 0 && d == 0 ){
                System.out.println(a+" is not a Perfect Square"+ "\n" +b+" is a Perfect Square");
            }else if(c != 0 && d != 0 ){
                System.out.println("Both the numbers are not perfect squares ");
            }
        }
    }
}
```

Output - Run (prg16) ×

```
--- exec:3.5.1:exec (default-cli) @ prg16 ---
Enter two positive numbers
36
90
36 is a Perfect Square
90 is not a Perfect Square
```