File name = Complex.java

public class Complex{

private int real;

private int imaginary;

public Complex(){

real = 0;

imaginary = 0;

}

public Complex(int rl, int imag) {

real = rl;

imaginary = imag;

}

public void add(int re , int imag) {

System.out.println("Addition of " + real + "+" + imaginary + "j" +" and " + re + "+" + imaginary + "j" + " is " + (real + re) + "+" + (imaginary + imag) + "j");

}

public void subtract(int re , int imag) {

System.out.println("Subtraction of " + real + "+" + imaginary + "j" +" and " + re + "+" + imaginary + "j"

+ " is " + (real - re) + "+" + (imaginary - imag) + "j");

}

public void multiplyWith(int re ,int imag) {

System.out.println("Multiplication of " + real + "+" + imaginary + "j" +" and " + re + "+" + imaginary + "j"

+ " is " + ( (real \* re) + (imag \* imaginary) ) + "+" + ( (real \* imag) + (re \* imaginary) ) + "j");

}

public void divideBy(int re ,int imag) {

System.out.println("Division of " + real + "+" + imaginary + "j" +" and " + re + "+" + imaginary + "j"

+ " is " + ( ((real \* re) - (imaginary \* imag)) / (Math.pow(re,2) - Math.pow(imag,2)) ) + "+" + ( ((real \* imag) - (re \* imaginary)) / (Math.pow(re,2) - Math.pow(imag,2)) ) + "j");

}

public boolean isReal() {

if(imaginary == 0)

return true;

return false;

}

public boolean isImaginary() {

if(real == 0)

return true;

return false;

}

}

Filename :SolutionComplex.java

public class SolutionComplex {

public static void main(String[] args) {

Complex complex;

complex = new Complex(1,2);

complex.add(1, 2);

complex.subtract(1, 2);

complex.multiplyWith(1, 2);

complex.divideBy(1, 2);

Complex complex1;

complex1 = new Complex(1,0);

System.out.println("Given Complex Number is Real = " + complex1.isReal());

System.out.println("Given Complex Number is Imaginary = " + complex1.isImaginary());

}

}