```
public class simple{

        public static double [][] inverse( double [][] a)
    {
              double [][]       inverse  = new double [2][2];
              double det = a[0][0] *a[1][1] - a[0][1]*a[1][0];
                  inverse [0][0]= a[1][1]/det;
                  inverse [0][1]= -a[0][1]/det;
                  inverse [1][0]=-a[1][0]/det;
                  inverse [1][1]=a[0][0]/det;
                      return inverse;
    }


    public static double [] mult ( double [][] x, double [] y)
    {
        double answer[] = new double [2];
        answer[0] = x[0][0]*y[0] + x[0][1]*y[1];
        answer[1] = x[1][0]*y[0] + x[1][1]*y[1];


        return answer;
    }

    public static void main (String a[])
    {
        double plain [] = {3.0,5.0}; // plain text
        double mat [][] = { {1.0,2.0}, {3.0,4.0}}; // encryption matrix
        double enc [] = mult ( mat , plain); // encrypted message
        // decrypt enc and check it equals p
        double [][] inv = inverse(mat);
        double decode [] = mult(inv,enc);
        for(int i = 0; i < 2;i++)
            {
                System.out.println(decode[i]);
            }

    }




}
```