import java.net.\*;

import java.io.\*;

public class DHClient {

    public static void main(String[] args) {

        String serverName = "localhost";

        int port = 8088;

        int p = 23, g = 9, a = 4;

        try (Socket client = new Socket(serverName, port);

             DataOutputStream out = new DataOutputStream(client.getOutputStream());

             DataInputStream in = new DataInputStream(client.getInputStream())) {

            System.out.println("Connecting to " + serverName + " on port " + port);

            System.out.println("Just connected to " + client.getRemoteSocketAddress());

            out.writeUTF(Integer.toString(p));

            out.writeUTF(Integer.toString(g));

            double A = Math.pow(g, a) % p;

            out.writeUTF(Double.toString(A));

            System.out.println("From Client : Private Key = " + a);

            double serverB = Double.parseDouble(in.readUTF());

            System.out.println("From Server : Public Key = " + serverB);

            double Adash = Math.pow(serverB, a) % p;

            System.out.println("Secret Key to perform Symmetric Encryption = " + Adash);

        } catch (Exception e) {

            e.printStackTrace();

        }

    }

}