import java.net.\*;

import java.io.\*;

public class DHServer {

    public static void main(String[] args) {

        int port = 8088;

        int b = 3; // Server Private Key

            System.out.println("Waiting for client on port " + port + "...");

            try (Socket server = serverSocket.accept();

                 DataInputStream in = new DataInputStream(server.getInputStream());

                 DataOutputStream out = new DataOutputStream(server.getOutputStream())) {

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

                System.out.println("From Server : Private Key = " + b);

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

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

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

                System.out.println("From Client : P = " + clientP);

                System.out.println("From Client : G = " + clientG);

                System.out.println("From Client : Public Key = " + clientA);

                double B = Math.pow(clientG, b) % clientP;

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

                double Bdash = Math.pow(clientA, b) % clientP;

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

            }

        } catch (IOException e) {

            e.printStackTrace();

        }

    }

}