using System;

class Program {

    static void Main(string[] args) {

        Console.Write("Enter current value: ");

        double currentValue = double.Parse(Console.ReadLine());

        Console.Write("Enter annual growth rate (e.g., 0.1 for 10%): ");

        double rate = double.Parse(Console.ReadLine());

        Console.Write("Enter number of years to forecast: ");

        int years = int.Parse(Console.ReadLine());

        double forecastRecursive = PredictFutureRecursive(years, currentValue, rate);

        Console.WriteLine($"\n[Recursive] Forecasted value after {years} years: {forecastRecursive:F2}");

        double forecastIterative = PredictFutureIterative(years, currentValue, rate);

        Console.WriteLine($"[Iterative] Forecasted value after {years} years: {forecastIterative:F2}");

    }

    static double PredictFutureRecursive(int year, double value, double rate) {

        if (year == 0) return value;

        return PredictFutureRecursive(year - 1, value, rate) \* (1 + rate);

    }

    static double PredictFutureIterative(int year, double value, double rate) {

        for (int i = 0; i < year; i++) {

            value \*= (1 + rate);

        }

        return value;

    }

}