import java.util.Scanner;

class myMath

{

    // Method to compute x^y

    static double power(double x, int y)

    {

        if (y == 0)

            return 1;

        else if (y % 2 == 0)

            return power(x \* x, y / 2);

        else

            return x \* power(x \* x, (y - 1) / 2);

    }

    // Method to compute x!

    static int fact(int x)

    {

        if (x == 0 || x == 1)

            return 1;

        else

            return x \* fact(x - 1);

    }

    public static void main(String[] args)

    {

        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter the value of x: ");

        double x = scanner.nextDouble();

        System.out.print("Enter the value of n: ");

        int n = scanner.nextInt();

        // Evaluate e^x using series expansion: e^x = 1 + x + (x^2/2!) + (x^3/3!) + ... + (x^n/n!)

        double resultExpX = 1;

        for (int i = 1; i <= n; i++)

        {

            resultExpX += myMath.power(x, i) / myMath.fact(i);

        }

        // Evaluate (1+x)^n using series expansion: (1+x)^n = 1 + n\*x + (n\*(n-1)\*x^2/2!) + ... + (x^n)

        double result1PlusXPowerN = 1;

        double term = 1;

        for (int i = 1; i <= n; i++)

        {

            term \*= (x \* (n - i + 1)) / i;

            result1PlusXPowerN += term;

        }

        System.out.println("e^" + x + " = " + resultExpX);

        System.out.println("(1 + " + x + ")^" + n + " = " + result1PlusXPowerN);

    }

}

A screenshot of a computer

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