**PROGRAM 1**

#include<stdio.h>

#include<math.h>

int f(int n)

{

if(n==0)

return 1;

else

return n\*f(n-1);

}

main()

{

float x, rad, e=0.0000001, a, c;

int n=0;

printf("Masukkan nilai x : ");

scanf("%f", &x);

rad=x\*3.14/180;

a=0;

do

{

a+=(pow(-1, n))\*(pow(rad, 2\*n+1))/f(2\*n+1);

n++;

}

while((fabs(a-sin(rad))) >= e);

c=(fabs(a-sin(rad)));

printf("\nNilai sin %0.2f hampiran : %.10f", x, a);

printf("\nNilai sin %0.2f sejati : %.10f", x, sin(rad));

printf("\nerror : %.20f\n", c);

printf("%d",n);

return 0;

}

**PROGRAM 2**

#include <stdio.h>

#include <math.h>

main()

{

float x,n,e,suku,jumlah=0,jumlahsebelum=0;

printf("Perhitungan ln(x)\n\n"); printf("Nilai x = "); scanf("%f",&x);

printf("\nN Hampiran Error\n");

printf("-----------------------------\n");

for(n=1;n<=8;n++)

{

suku=pow(-1,n-1)\*pow(x-1,n)/n;

jumlah=jumlah+suku;

e=fabs((jumlah-jumlahsebelum)/jumlah);

printf("%.0f %.10f %.10f \n",n,jumlah,e);

jumlahsebelum=jumlah;

}

printf("\nln(x) = %.10f",jumlah); printf("\nError = %.10f",e);

}

**PROGRAM 3**

#include <stdio.h>

#include <math.h>

#define e 0.000000001

float fact(float n)

{

if(n==0) return 1; else

return n\*fact(n-1);

}

int main(void)

{

float x,n=0,suku=1,jumlah=0;

printf("Perhitungan e^(x)\n"); printf("Nilai x = "); scanf("%f",&x);

printf("Epsilon = %.10f\n\n",e);

printf("N HAMPIRAN ERROR\n");

printf("-----------------------------\n");

//Batas akhir: epsilon (e) for(n=0;fabs(suku)>=e;n++)

{

suku=pow(x,n)/fact(n);

jumlah=jumlah+suku;

printf("%.0f %.10f %.10f \n",n,jumlah,fabs(pow(M\_E,x)-

jumlah));

}

printf("\ne^(x) = %.15f (Nilai Hampiran)",jumlah); printf("\ne^(x) = %.15f (Nilai Sejati)",pow(M\_E,x)); printf("\nError = %.15f",fabs(pow(M\_E,x)-jumlah));

}