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/\* COMPRO1 Machine Problem Part 2 \*/

/\* CHUA\_KYLE MATTHEW C. \*/

/\* S19A \*/

/\* \*/

/\* This file should contain the function DEFINITION of the \*/

/\* mp1\_math functions. \*/

/\* \*/

/\* NOTES: \*/

/\* 1. Change the word "lastname" in the filename to your own last name. \*/

/\* For example, if your last name is SANTOS, then this file should be \*/

/\* named as santos\_mp2\_math.c \*/

/\* 2. Your main task is to implement/fill-up the body of the functions. \*/

/\* 3. You also need to compile this source code separately to produce \*/

/\* the object file. \*/

/\* 4. The following are NOT ALLOWED: \*/

/\* a. addition of new codes other than the implementation of the body \*/

/\* of the functions and the entries in this preamble \*/

/\* b. changing the #define \*/

/\* c. changing the return type, function name and parametrizations \*/

/\* d. calling output function such as printf() - do not output anything \*/

/\* inside the function definitions! \*/

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#include "mp2\_math.h"

#define NUMBER\_OF\_TERMS 10

/\* computes and returns the value of x raised to n \*/

double RaiseTo(double x, int n)

{

int i;

double temp;

temp=1;

for(i=0; i<n; i++)

temp\*=x;

return temp;

}

/\* computes and returns the value of the factorial of n \*/

double factorial(int n)

{

int i;

double factored;

factored=n;

for(i=1; i<n; i++){

factored\*=i;

}

return factored;

}

/\* computes and returns the value of the cosine of angle x \*/

/\* note that x is in radians \*/

double cosine(double x)

{

int ctr, n=2;

double final=1;

for(ctr=1;ctr<NUMBER\_OF\_TERMS;ctr++){

if(n%4==2)

final -= (RaiseTo(x,n)/factorial(n));

else

final += (RaiseTo(x,n)/factorial(n));

n+=2;

}

return final;

}

/\* computes and returns the value of the sine of angle x \*/

/\* note that x is in radians \*/

double sine(double x)

{

int ctr, n=3;

double final=x;

for(ctr=1;ctr<NUMBER\_OF\_TERMS;ctr++){

if(n%4==3)

final -= (RaiseTo(x,n)/factorial(n));

else

final += (RaiseTo(x,n)/factorial(n));

n+=2;

}

return final;

}