

#include <stdio.h>

#include <math.h>

#define EPS .00000001

double func\_f(double, double);

int main()

{

double x = 0.0, y = 0.0;

double h = 0.25, dx = 0.25, xmax = 5;

double ddx = 0.0, k1, k2, k3, k4;

printf(" X\t Y\n");

do

{

if (x >= ddx - EPS)

{

ddx += dx;

printf("%8.4f, %8.4f\n", x, y);

}

k1 = func\_f(x, y);

k2 = func\_f(x + h / 2.0, y + h \* k1 \* h / 2.0);

k3 = func\_f(x + h / 2.0, y + h \* k2 \* h / 2.0);

k4 = func\_f(x + h, y + k3 \* h);

y += (h / 6.0) \* (k1 + 2.0 \* k2 + 2.0 \* k3 + k4);

x += h;

} while (x <= xmax);

return 0;

}

double func\_f(double x, double y)

{

return -2 \* x + 4 + 2 \* x \* sin(5 \* x);

}