#include <stdio.h>

double f(double x, double y) {

double m;

m = (x - y) / (x + y);

return m;

}

int main() {

double x0, y0, k1, k2, k3, k4, delta, y, x, h, xn;

printf("y' = f(x,y) = (x-y)/(x+y) given.\n");

printf("Enter initial value for x (x\_0): ");

scanf("%lf", &x0);

printf("Enter initial value for y (y\_0): ");

scanf("%lf", &y0);

printf("Enter the spacing value for x (h): ");

scanf("%lf", &h);

printf("Enter the value of x at which y is required: (x\_n): ");

scanf("%lf", &xn);

x = x0;

y = y0;

printf("x\t\ty\n");

printf("%lf\t%lf\n", x, y);

while (x < xn) {

k1 = h \* f(x, y);

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

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

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

delta = ((k1 + 2 \* k2 + 2 \* k3 + k4) / 6.0);

y = y + delta;

x = x + h;

printf("%lf\t%lf\n", x, y);

}

printf("f(%lf) = %lf", xn, y);

return 0;

}