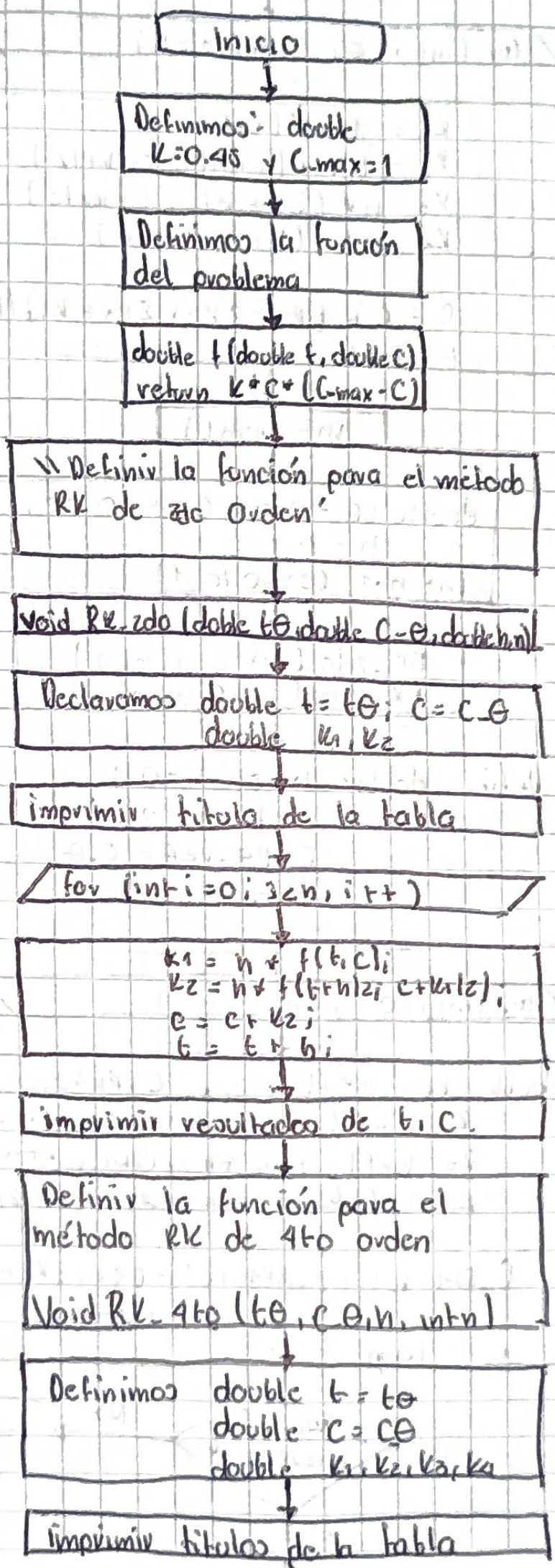
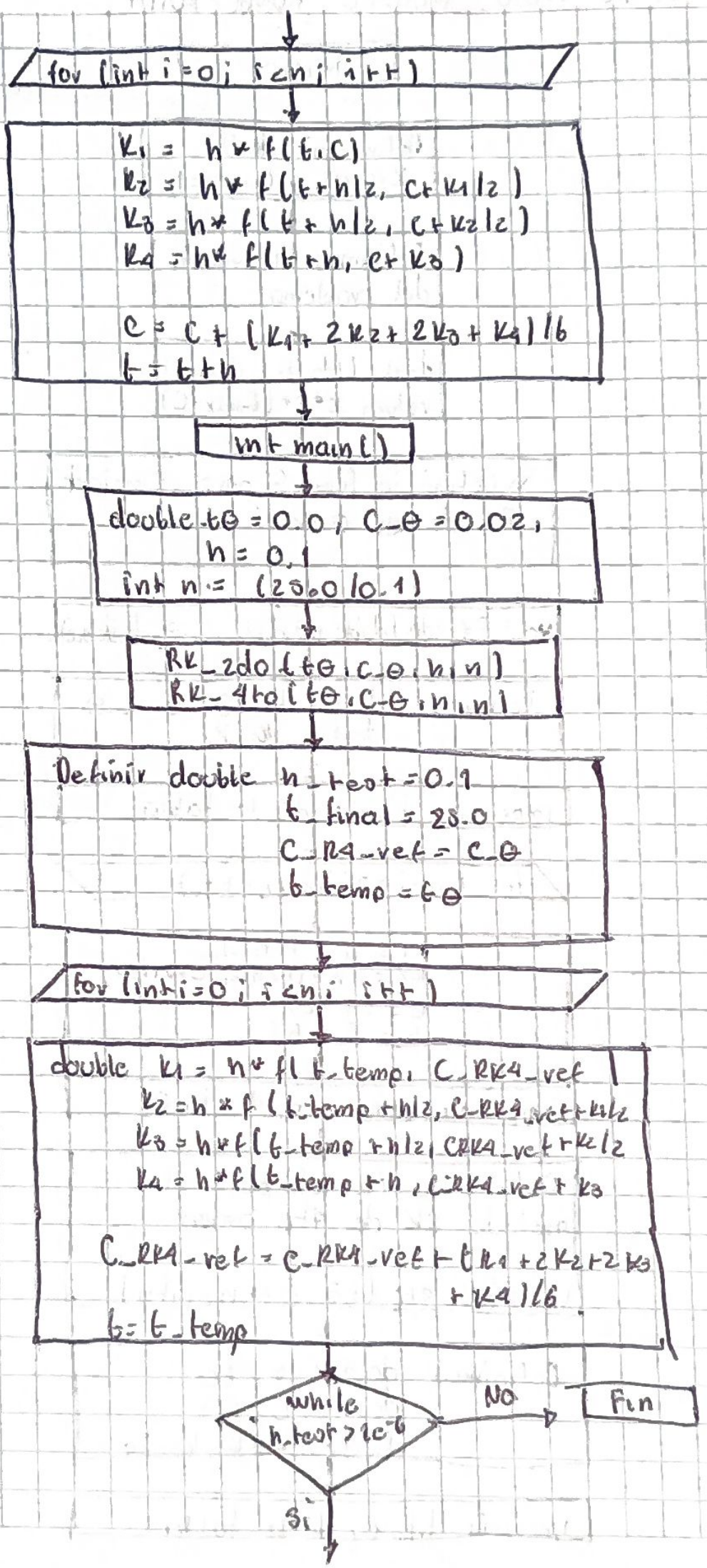
Metodos Numerico

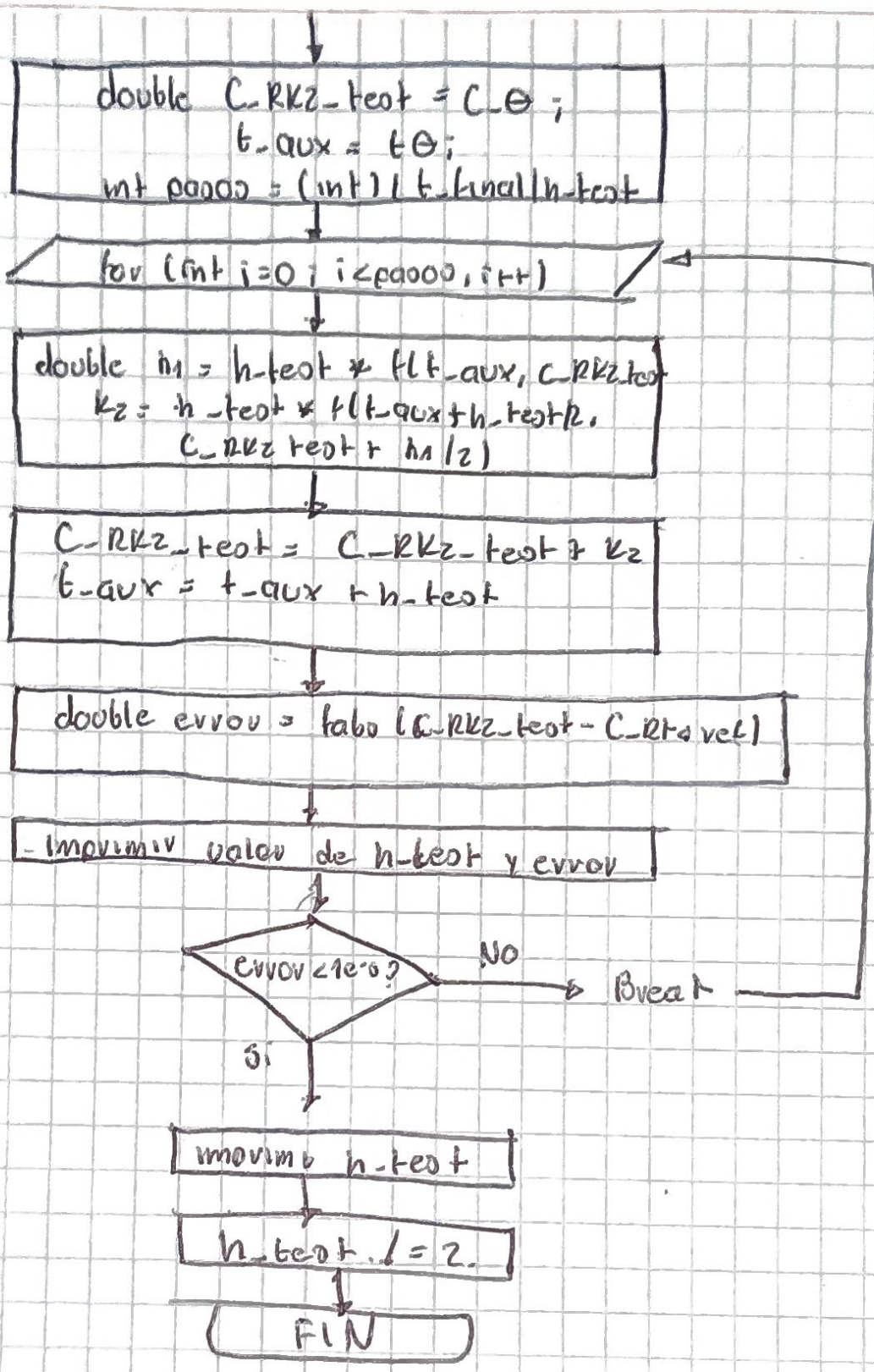
Adolfo Hernandez Ramirez

08-12-2025

Diagrama de flujo. Metodo Runge-Kutta.




for (int i=0; i<n; i++)
K1 = h * f(t, C)
K2 = h * f(t+h/2, C+K1/2)
K3 = h * f(t+h/2, C+K2/2)
K4 = h * f(t+h, C+K3)
C = C + (K1 + 2K2 + 2K3 + K4)/6
t = t+h
int main()
double t0 = 0.0, C_0 = 0.02,
h = 0.1
int n = (20.0/0.1)
RK_2do(t0, C_0, h, n)
RK_4to(t0, C_0, h, n)
Definir double h_test = 0.1
t_final = 20.0
C_RK4_vef = C_0
t_temp = t0
for (int i=0; i<n; i++)
double K1 = h*f(t_temp, C_RK4_vef
K2 = h*f(t_temp+h/2, C_RK4_vef+K1/2
K3 = h*f(t_temp+h/2, C_RK4_vef+K2/2
K4 = h*f(t_temp+h, C_RK4_vef+K3
C_RK4_vef = C_RK4_vef + (K1+2K2+2K3
+K4)/6
t = t_temp
while
h_test > 1e-6
NO
Fin
Si


double C_RK2_test = C_0 ;
t_aux = t0;
int paaaa = (int) (t_final/h_test
for (int i=0 ; i<paaaa ; i++)
double h1 = h_test * f(t_aux, C_RK2_test
k2 = h_test * f(t_aux + h_test/2.
C_RK2_test + h1/2)
C_RK2_test = C_RK2_test + k2
t_aux = t_aux + h_test
double errou = fabs (C_RK2_test - C_RK4_ref)
- Imprimir valor de h_test y errou
errou < 1e-6 ?
No
Break
Si
imprimir h_test
h_test ./ = 2.
FIN