date.m

v0=10;

u0=pi/3;

g=9.8;

k=0.5;

f.m

function [ y ] = f( t )

%UNTITLED3 Summary of this function goes here

% Detailed explanation goes here

date;

y=-t/(k^2)+(v0\*sin(u0)+1/k^2)\*(1-exp(-g\*k^2\*t))/(g\*k^2);

end

tmax.m – pentru a calcula solutia ecuatiei y(t)=0

clear all

date;

a=0.1;

b=1000;

c=(a+b)/2;

A=a;

B=b;

C=c;

for i=1:61

if f(A)\*f(C)<=0

B=C;

C=(A+B)/2;

else

A=C;

C=(A+B)/2;

end

if abs(f(C))< exp(-100)

disp (C);

disp(f(C));

break;

return;

end

end

f\_deriv.m

function [ y\_deriv] = f\_deriv(t)

%UNTITLED7 Summary of this function goes here

% Detailed explanation goes here

date;

y\_deriv=-1/(k^2)+(v0\*sin(u0)+1/k^2)\*(exp(-g\*k^2\*t));

end

f0\_deriv.m

function [ x\_deriv ] = f0\_deriv(t)

%UNTITLED2 Summary of this function goes here

% Detailed explanation goes here

date;

x\_deriv=v0\*cos(u0) \* exp(-g\*k^2\*t);

end

t\_pt\_hmax.m – pentru a calcula solutia ecuatiei y’(t)=0

clear all

date;

a=0.1;

b=1000;

c=(a+b)/2;

A=a;

B=b;

C=c;

for i=1:80

if f\_deriv(A)\*f\_deriv(C)<=0

B=C;

C=(A+B)/2;

else

A=C;

C=(A+B)/2;

end

if abs(f\_deriv(C))< exp(-100)

disp (C);

disp(f\_deriv(C));

break;

return;

end

end

traiectorie.m

date;

t=linspace(0,1.2281, 100);

x=(v0\*cos(u0)\*(1-exp(-g\*k^2.\*t)))/(k^2\*g);

y=-t./(k^2)+(v0\*sin(u0)+1/k^2)\*(1-exp(-g\*k^2.\*t))/(g\*k^2);

plot(x,y)

title('Traiectorie cu rezistenta')

figure(2)

numframes =100;

for i=1:numframes

axis([0 2 0 1.8])

plot(x(i),y(i),'\*');

hold on;

M(:,i)=getframe;

end

movie(M,3,10);

xmax=(v0\*cos(u0)\*(1-exp(-g\*k^2.\*1.2281)))/(k^2\*g)

ymax=-0.4703./(k^2)+(v0\*sin(u0)+1/k^2)\*(1-exp(-g\*k^2.\*0.4703))/(g\*k^2)

xhmax=(v0\*cos(u0)\*(1-exp(-g\*k^2.\*0.4703)))/(k^2\*g)

vmax=sqrt(f0\_deriv(1.2281)^2+ f\_deriv(1.2281)^2)

umax=atan(f\_deriv(1.2281)/f0\_deriv(1.2281))

figure(3)

t0max=(v0\*sin(u0)+sqrt(v0\*sin(u0))^2)/g;

t0=linspace(0, t0max, 100);

x0=v0\*cos(u0).\*t0;

y0=-1/2\*g\*t0.^2+v0\*sin(u0).\*t0;

plot(x0,y0)

title('Traiectorie fara rezistenta')

x0max=1/g\*v0\*cos(u0)\*(v0\*sin(u0)+sqrt((v0\*sin(u0))^2));

figure(4)

numframes =100;

for i=1:numframes

axis([0 9 0 4])

plot(x0(i),y0(i),'\*');

hold on;

M(:,i)=getframe;

end







