date.m:

g=9.8;

R=2;

v0=sqrt(4.01\*g\*R);

m=4;

system\_f.m:

function [ f] = sistem\_f(t,q)

%UNTITLED3 Summary of this function goes here

% Detailed explanation goes here

f=zeros(2,1);

date;

f=[q(2);-g\*sin(q(1))/R];

end

pendul.m:

date;

[t,q]=ode45(@sistem\_f,[0;10],[0;v0/R]);

teta=q(:,1);

N=3\*m\*g\*cos(teta)-2\*m\*g+m\*v0^2/R;

x1=R\*cos(teta);

x2=R\*sin(teta);

figure(1)

plot(x1,x2,'.','Markersize',6)

title('Pendulul matematic')

xlabel('x1')

ylabel('x2')

grid on

figure(2)

title('Pendulul matematic')

xlabel('x1')

ylabel('x2')

grid on

for i=1:size(teta,1)

plot(x1(i),x2(i),'\*',-R,-R,'o',R,R,'o');

axis equal

hold on

M(i)=getframe;

end

movie(M,3,10)

figure(3)

plot(t,N)

title('Reactiunea N')

xlabel('t')

ylabel('N')

grid on

figure(4)

plot(t,teta)

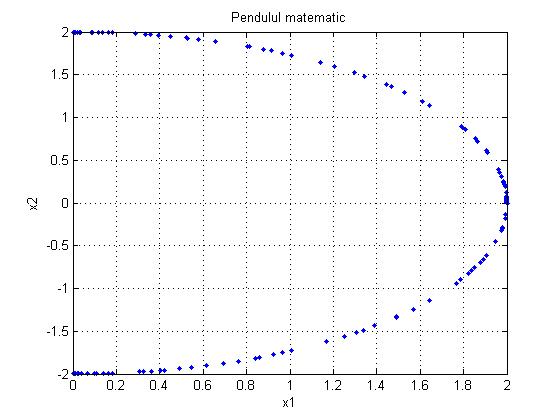
title('Unghiul teta ca functie de t')

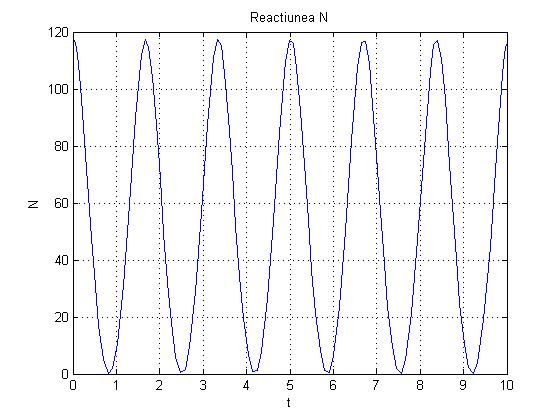
xlabel('t')

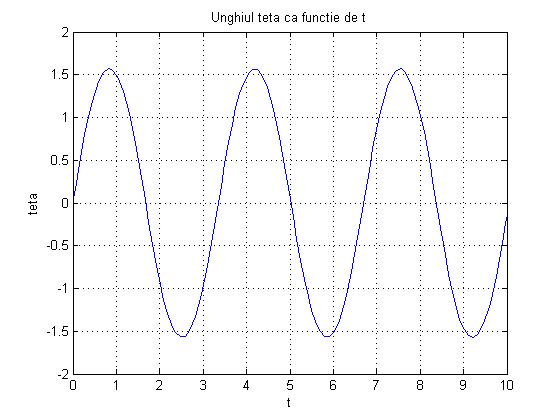
ylabel('teta')

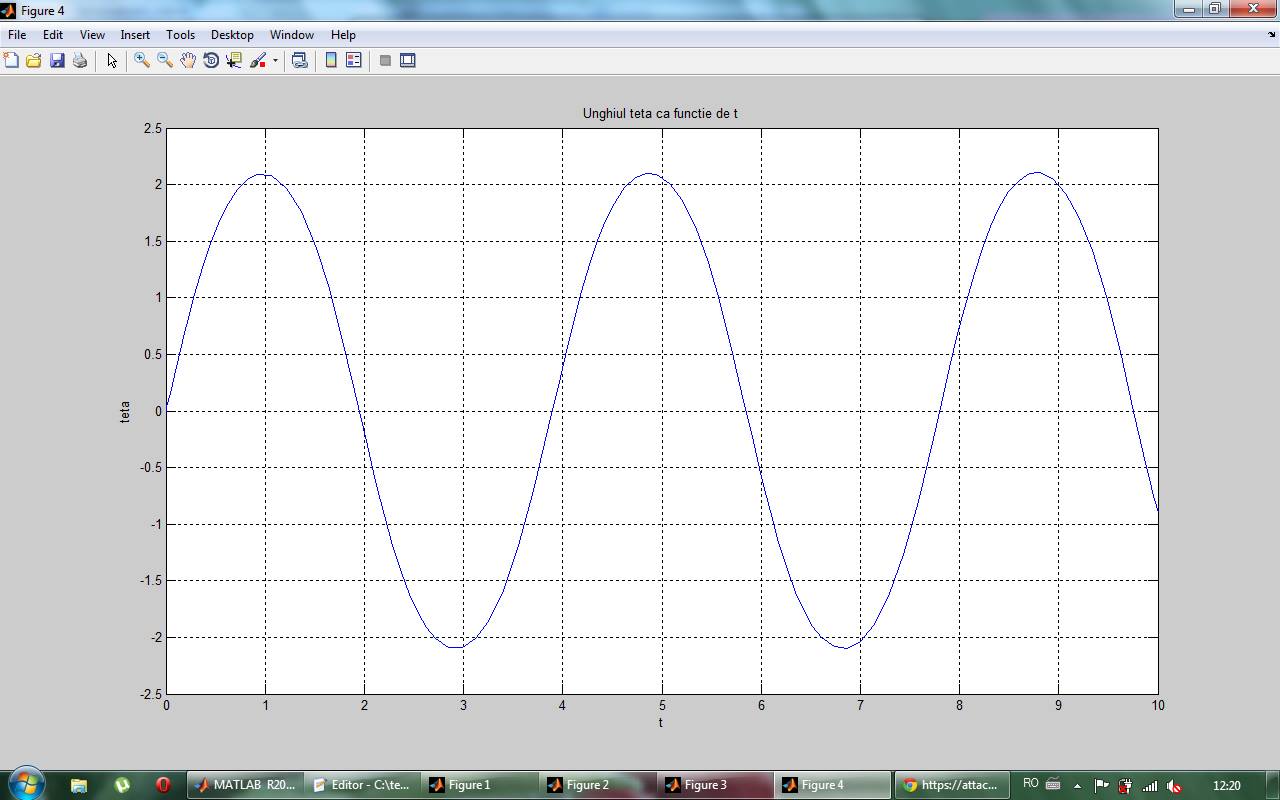
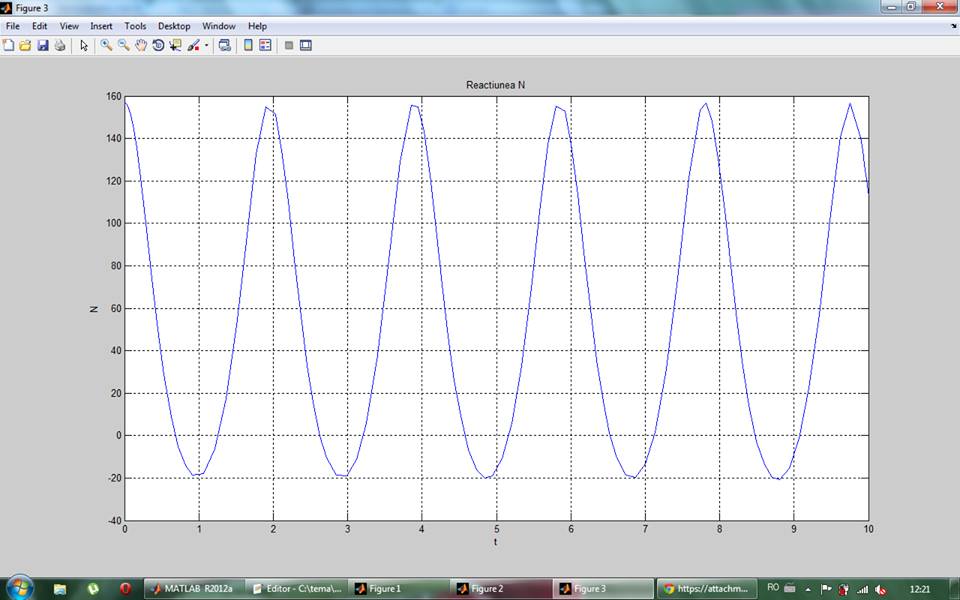
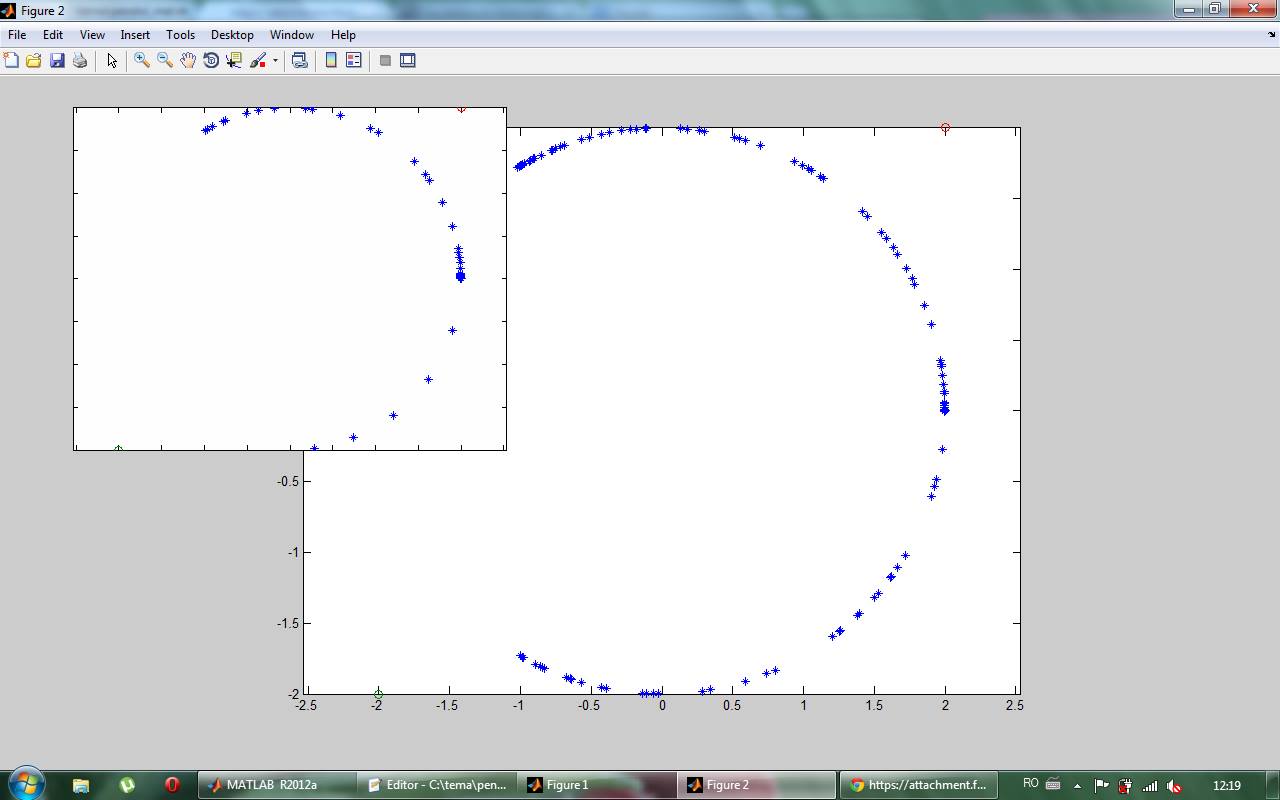
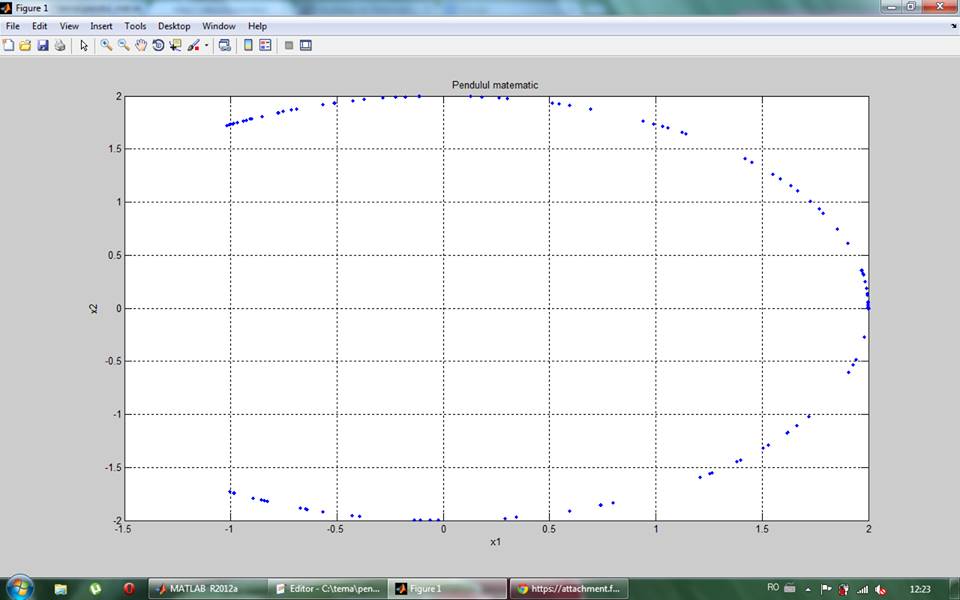
grid on

**Pentru v0=sqrt(2\*g\*R):**

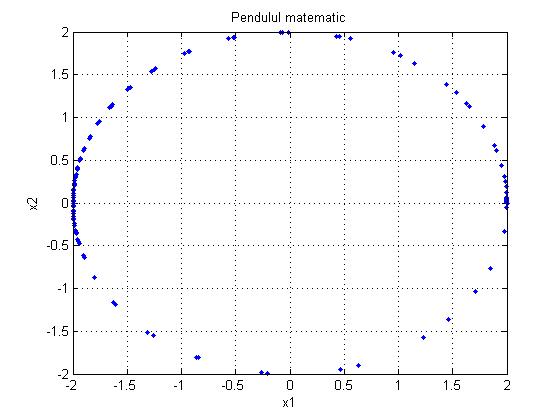
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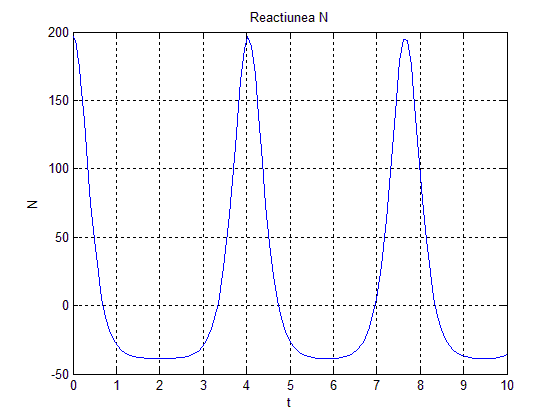
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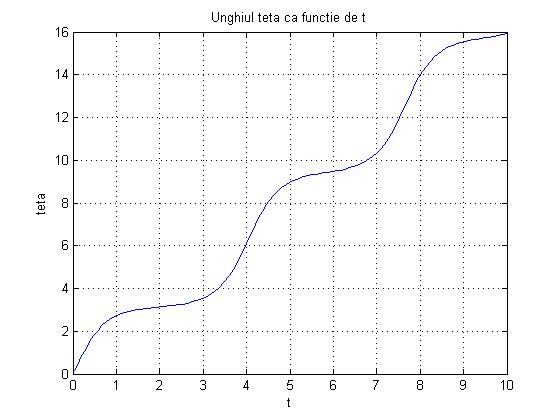
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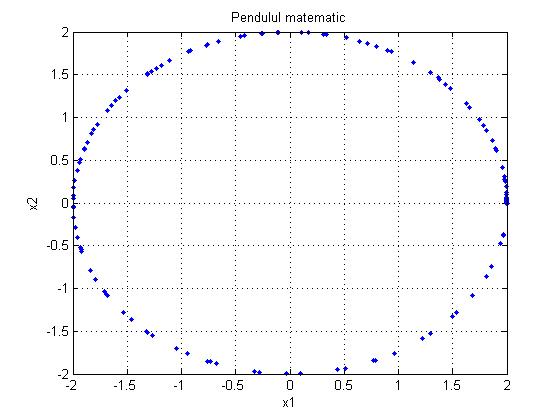
**Pentru v0=sqrt(3\*g\*R):** 

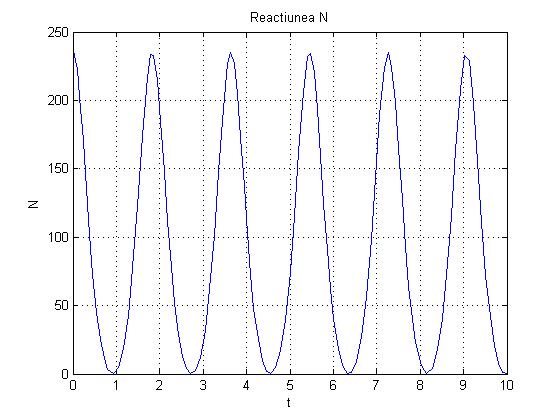
Pentru v0=sqrt(4.01\*g\*R):

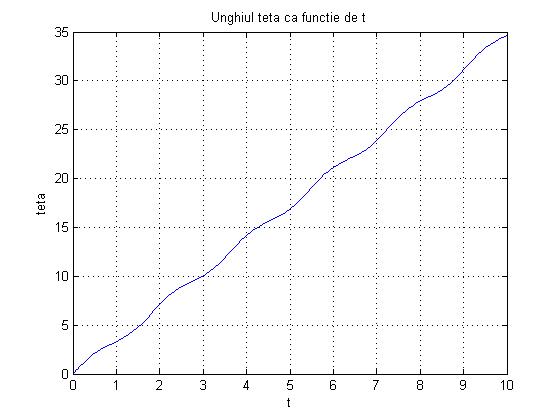




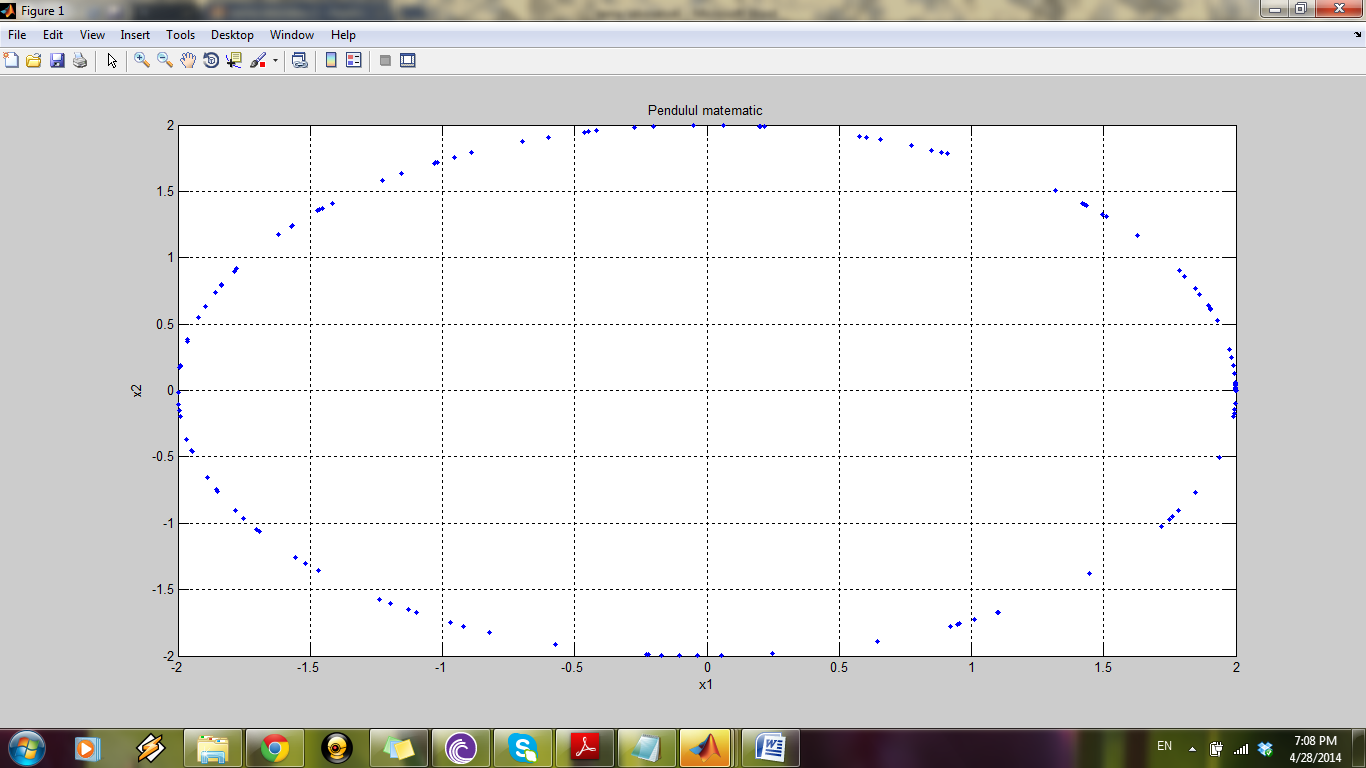


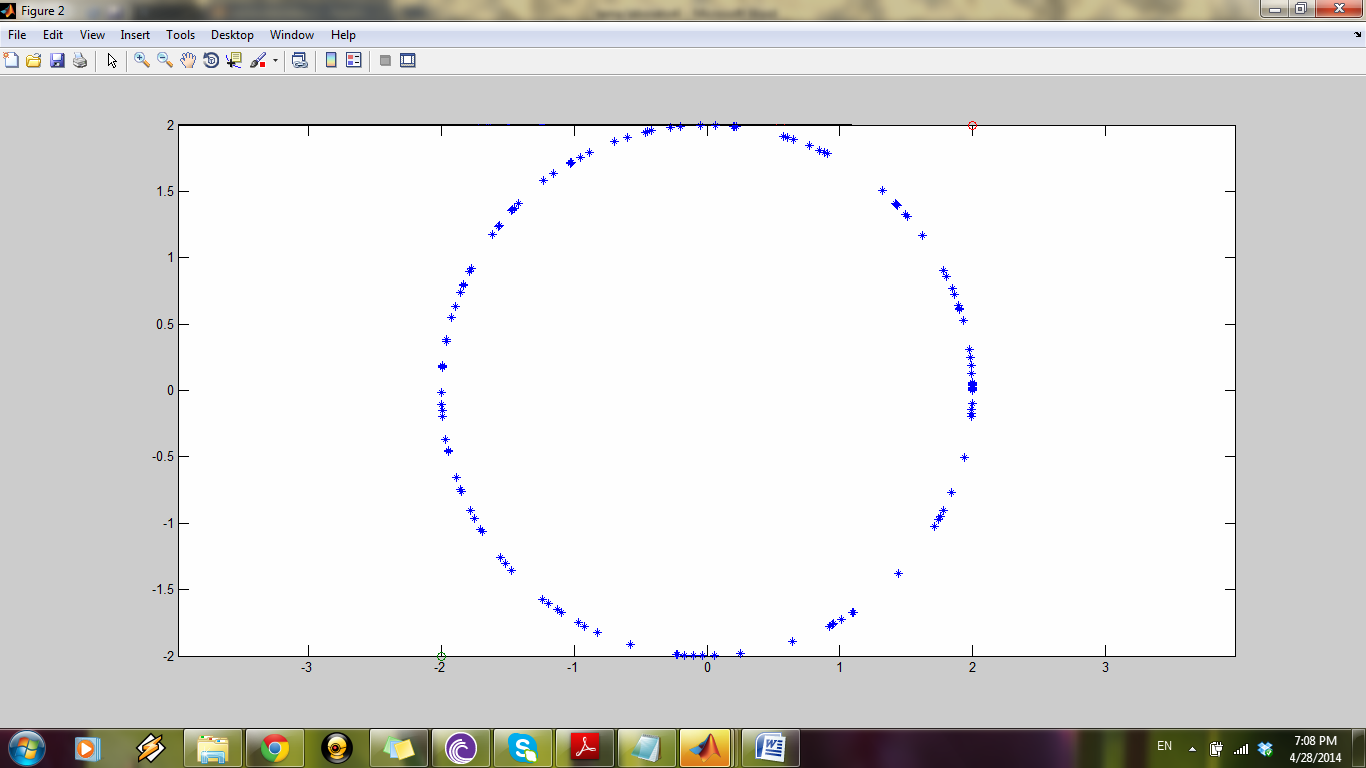
Pentru v0=sqrt(5\*g\*R):

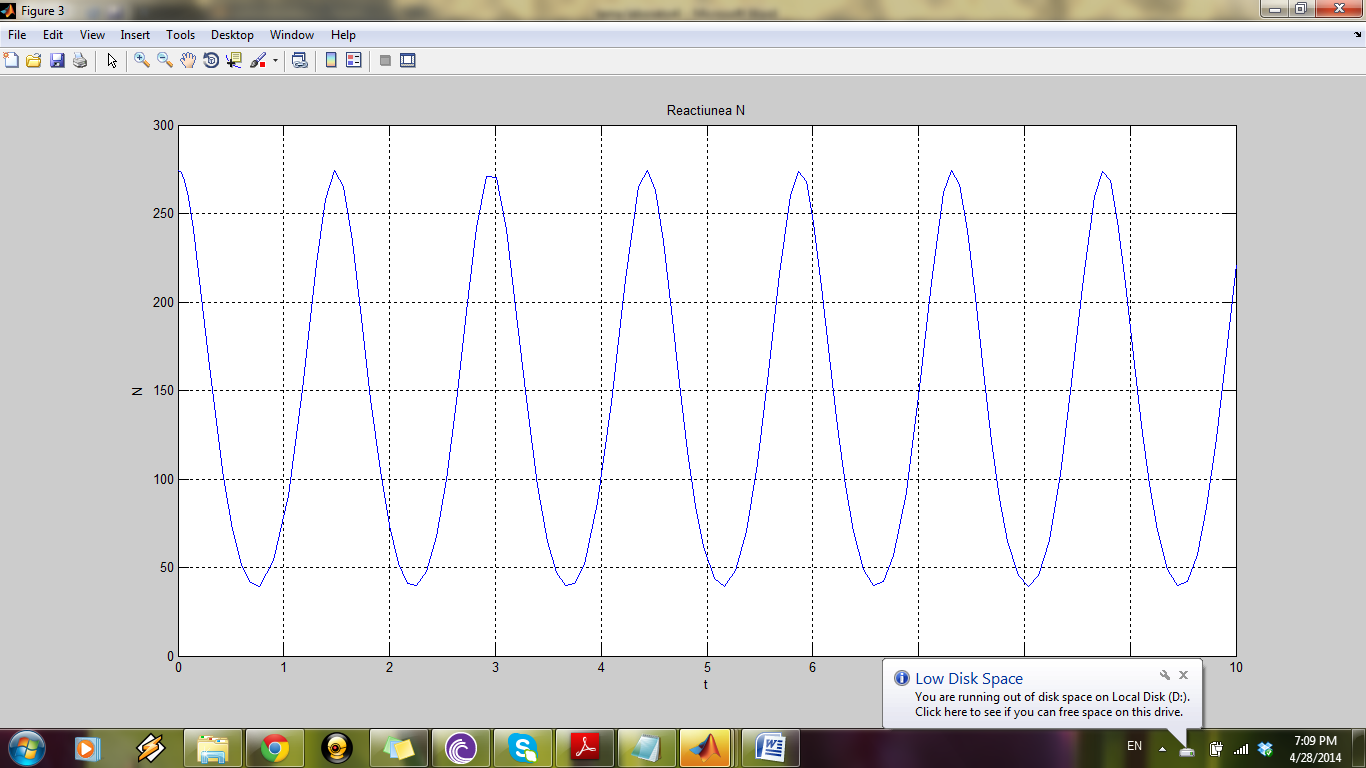


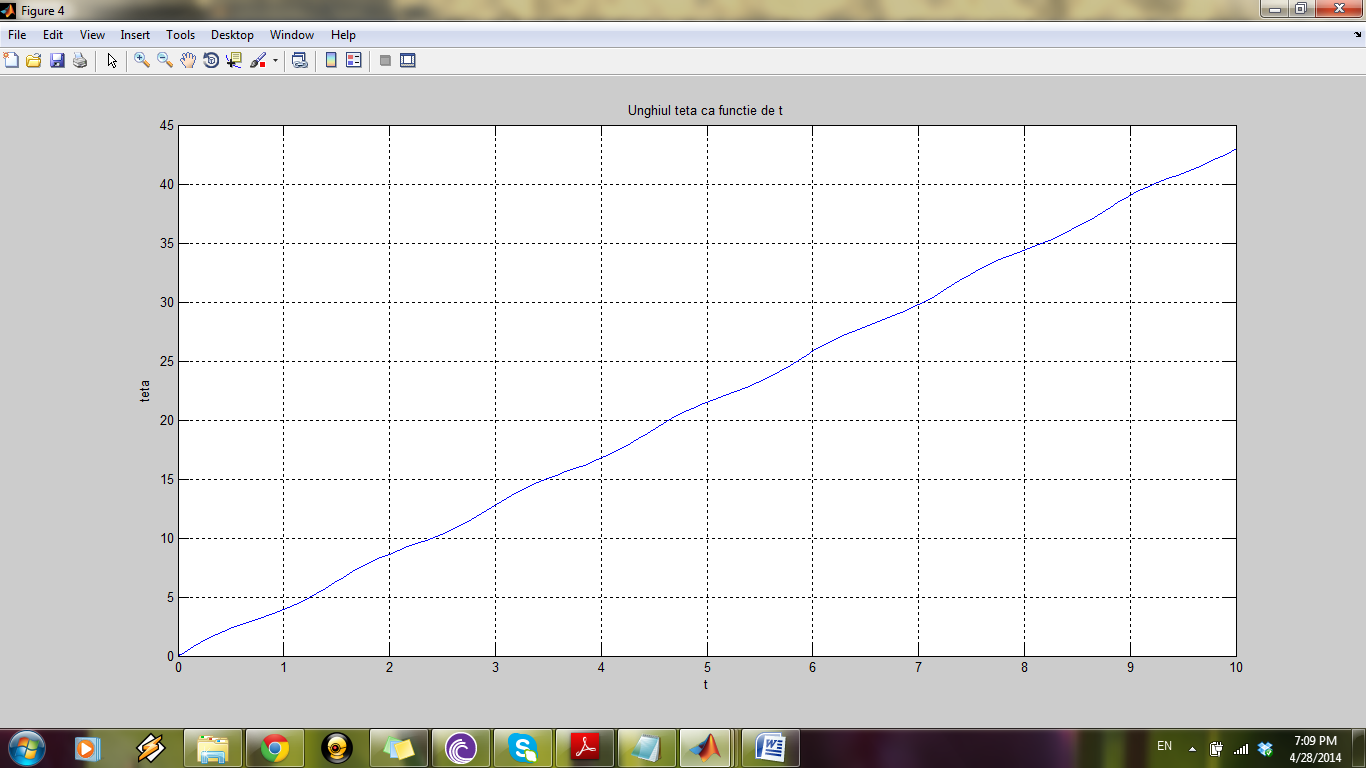


**Pentru v0=sqrt(6\*g\*R):**

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