**LUCRARE 6**

**Lab 6 ex1:**

w=0:0.01:3;

numarator=4;

numitor=[1 2 4];

x=abs(freqs(numarator,numitor,w));

plot(w,x)

**Lab 6 ex2:**

w=0:0.01:3;

t=0:0.02:4;

numarator=10;

numitor=[1 4.5 9 10];

g=abs(freqs(numarator,numitor,w));

a=step(numarator,numitor,t);

subplot(2,2,1);

plot(t,a)

subplot(2,2,2);

plot(w,g)

**Lab 6 ex3:**

t=0:0.2:2;

w=0:0.2:8;

numarator=[750];

numitor=[1 36 205 750];

numarator2=[25];

numitor2=[1 3+4j 3-4j];

roots(numitor);

y=step(numarator,numitor,t);

z=abs(freqs(numarator,numitor,w));

y1=step(numarator2,numitor2,t);

z1=abs(freqs(numarator2,numitor2,w));

subplot(2,2,1);

plot(t,y);

subplot(2,2,2);

plot(w,z)

subplot(2,2,3);

plot(t,y1)

subplot(2,2,4);

plot(w,z1)

**Lab 6 ex4:**

den1=[1 3 0];

num1=[150 180 30];

den2=[0.01 0.1 1];

num2=[20 20 20];

dena=conv(den1,den2);

den12=[1 2 0];

den22=den2;

denb=conv(den12,den22);

bode(num1,dena);

bode(num2,denb);

w=logspace(-3,3);

w=logspace(-2,2);

[m,f]=bode(num1,dena,w)

margine(num1,dena)

**Lab 6 ex5:**

num=[10];

den=[1 3 2 0];

w=logspace(-1,2);

nyquist(num,den,w)

**Lab 6 ex8:**

num=[10];

den=[1 11 10 0];

[mag,phase,w]=bode(num,den)

margin(num,den)