
الجامعة الهاشمية
Zarqa - Jordan
THE HASHEMITE UNIVERSITY
1995

# Codes part

**The code to find step response of the system without controller :**

```
clear all
clc

m=3;
b=1.5;
k=1;

syms s

Gnum=1;
Gden=sym2poly(m*s^2+b*s+k);


G=tf(Gnum,Gden)

H=1;

T=feedback(G,H)

step(T)
```

# Code of root lucas to find gain (K) after enterd controller :

```
>> num=[1}
        1


>>den={3 , 1.5 , 1 , 1 ]

    3       1.5      1       1

tf=(G)

rlocus(tf)
```

**Code of find the step reponse after adding (0.0175/s) :**

```
clc

m=3;
b=1.5;
k=1;
K=.0175;

syms s

Gnum=1*K;
Gden=sym2poly(m*s^3+b*s^2+k*s);>>>multibly by s


G=tf(Gnum,Gden)

H=1;

T=feedback(G,H)

step(T)
```