№1

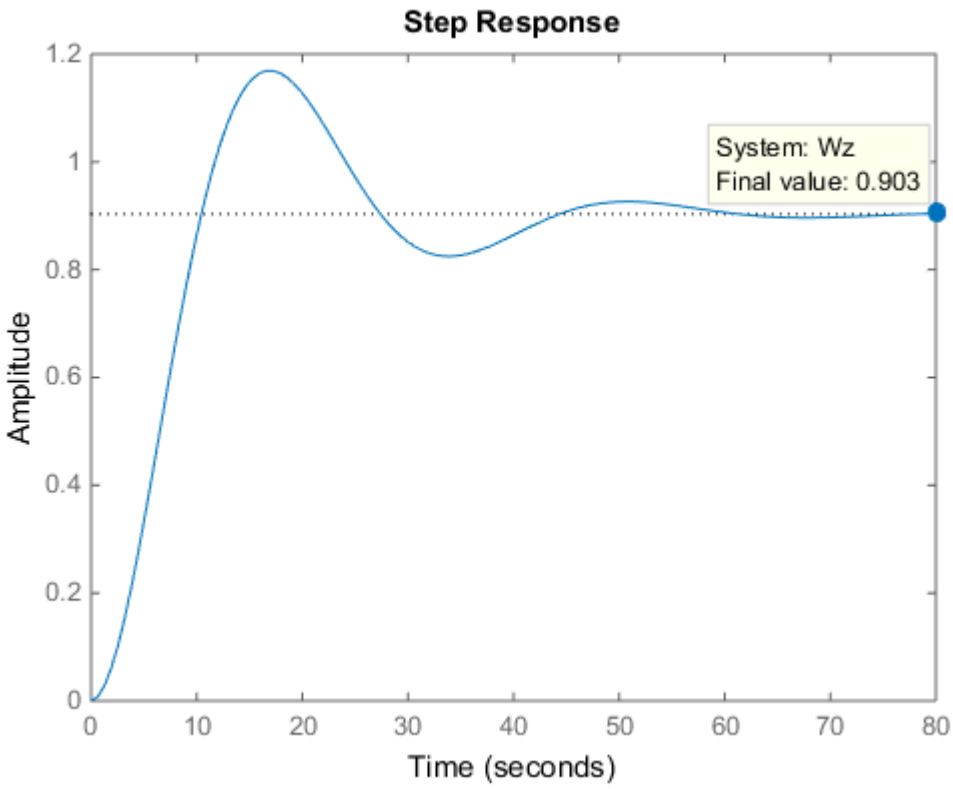
```
>> p=[1 28 1]

p =

     1    28     1

>> q=[28 1]

q =

    28     1
>> c=conv(p,q)

c =

    28   785    56     1
>> g=tf(q,p)

g =

     28 s + 1
  --------------
  s^2 + 28 s + 1

Continuous-time transfer function.
>> pole(g)

ans =
```

```
  -27.9642
   -0.0358
>> zero(g)

ans =

   -0.0357
>> polyval(p,-1)

ans =

   -26
```

№2

```
>> W1=tf([1],[28 1])

W1 =

     1
  --------
  28 s + 1

Continuous-time transfer function.

>> W2=tf([1 28],[28 3])

W2 =

   s + 28
  --------
```

```
  28 s + 3

Continuous-time transfer function.
>> Wr=series(W1,W2)

Wr =

        s + 28
  -------------------
  784 s^2 + 112 s + 3

Continuous-time transfer function.
>> Wz=feedback(Wr,1)

Wz =

         s + 28
  --------------------
  784 s^2 + 113 s + 31

Continuous-time transfer function.
>> step(Wz)
```


Step Response
System: Wz
Final value: 0.903
Amplitude
Time (seconds)
0
0.2
0.4
0.6
0.8
1
1.2
0
10
20
30
40
50
60
70
80