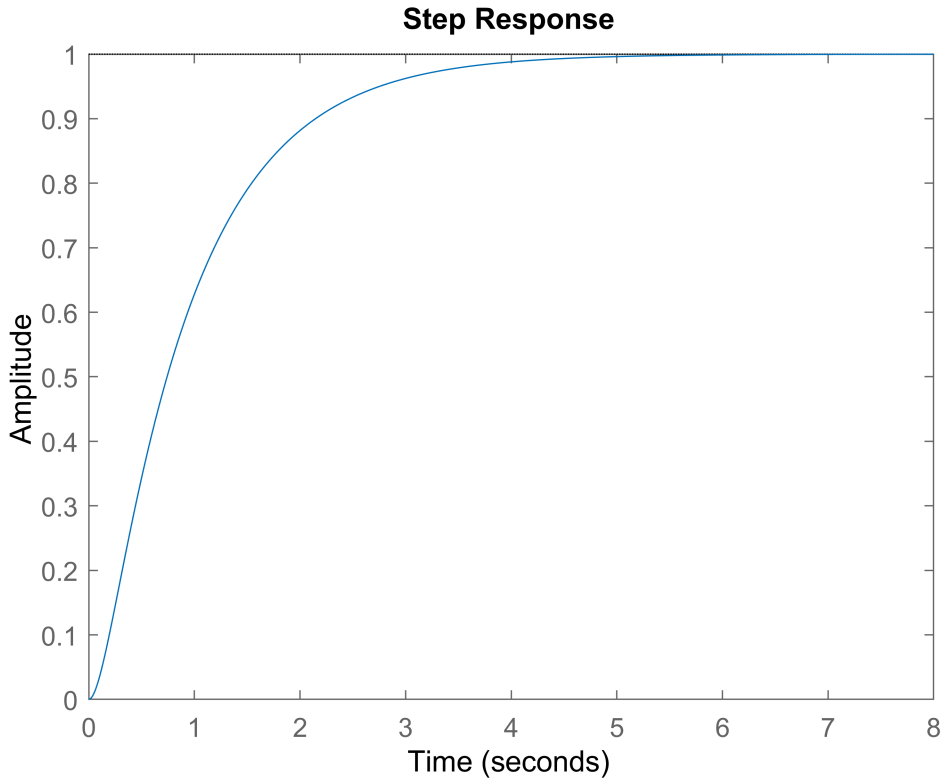
EJERCICIO 1

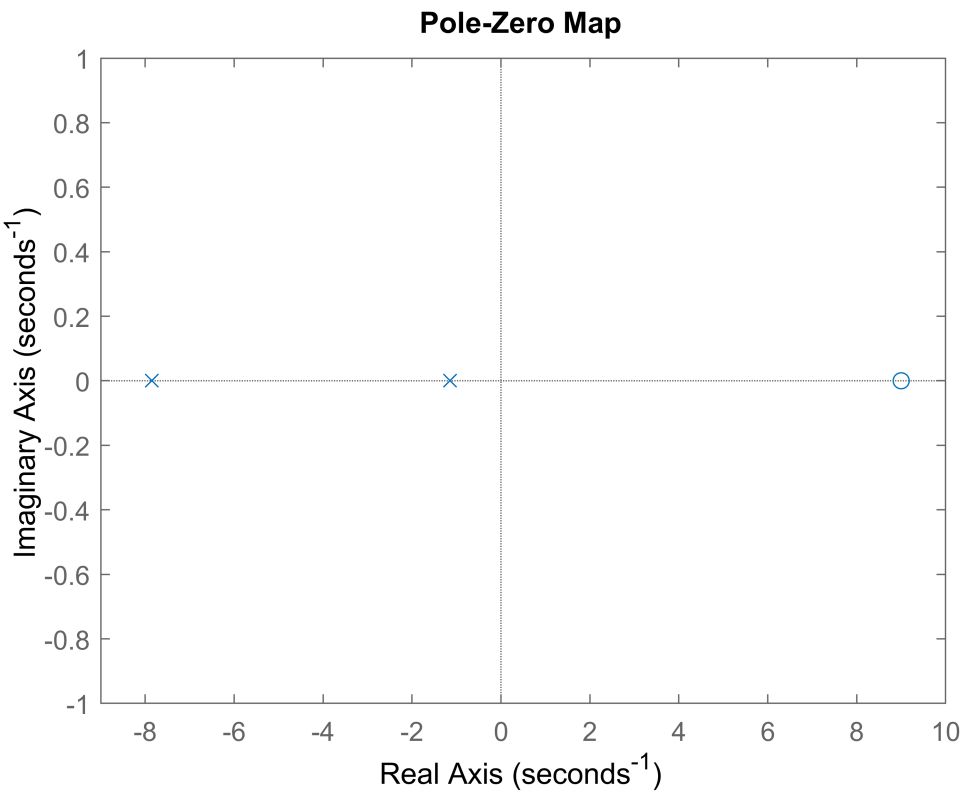
```
clear all

num = [9];
den = [1 9 9];

p = roots(den)
```

```
p = 2×1
   -7.8541
   -1.1459
```

```
step(num,den)
```




```
[zz pp kk] = tf2zp(num,den);
pzmap(pp,kk)
xlim( [-9 10] )
```

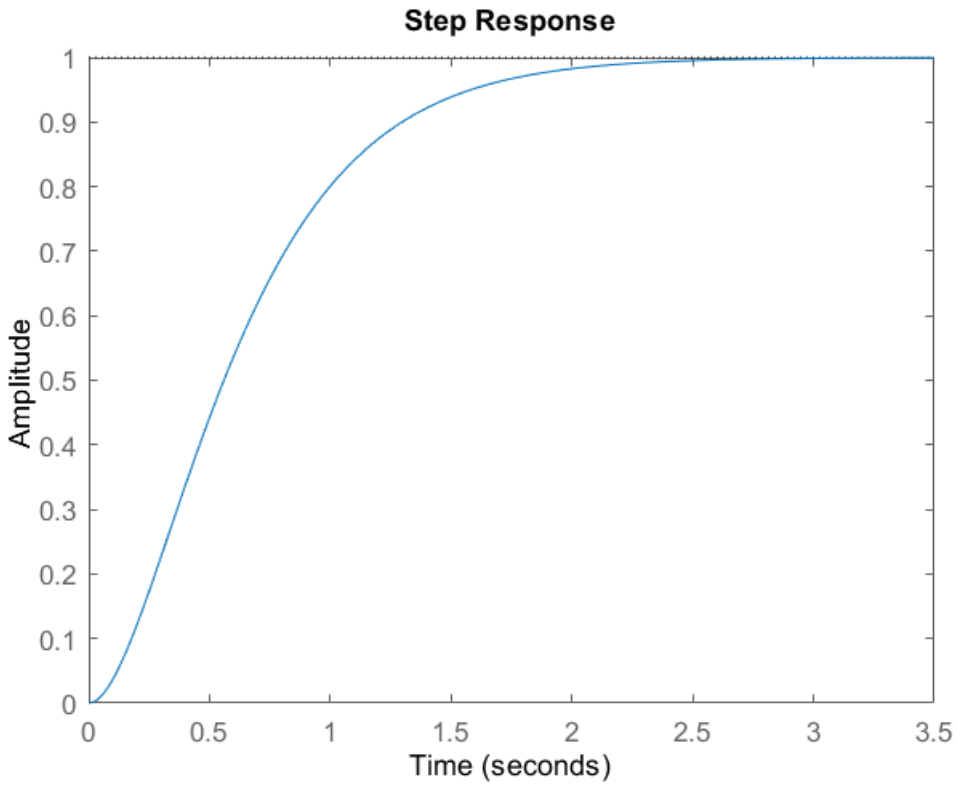


EJERCICIO 2

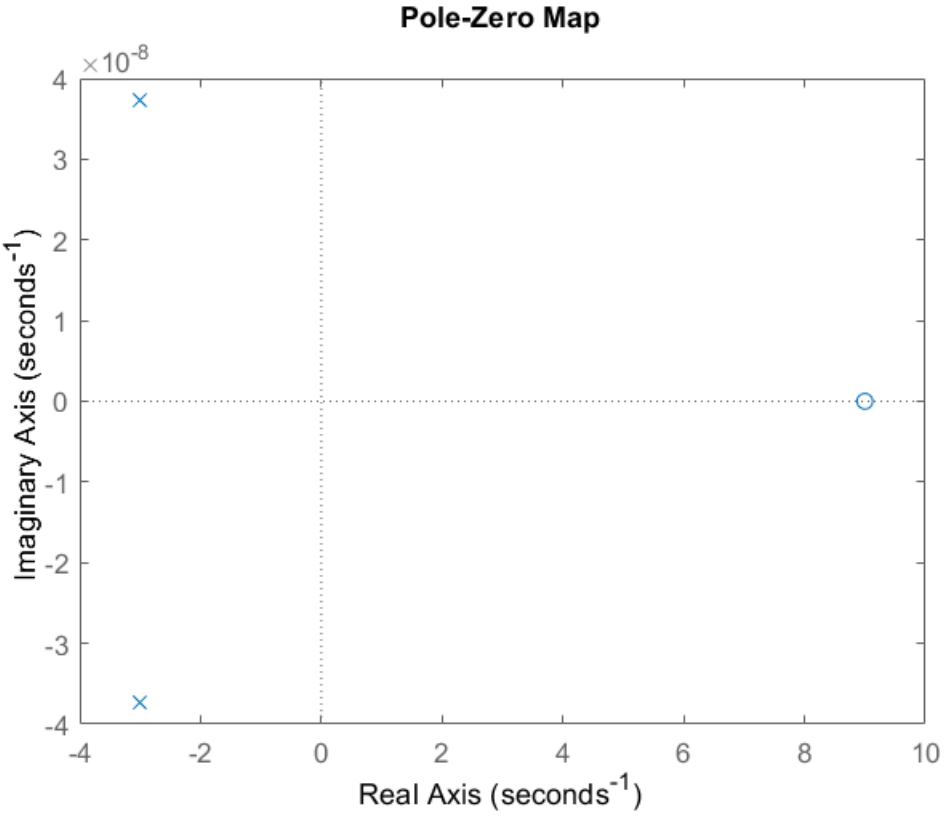
```
clear all

num = [9];
den = [1 6 9];

p = roots(den)
```

```
p = 2×1 complex
  -3.0000 + 0.0000i
  -3.0000 - 0.0000i
```

```
step(num,den)
```




```
[zz pp kk] = tf2zp(num,den);
pzmap(pp,kk)
```

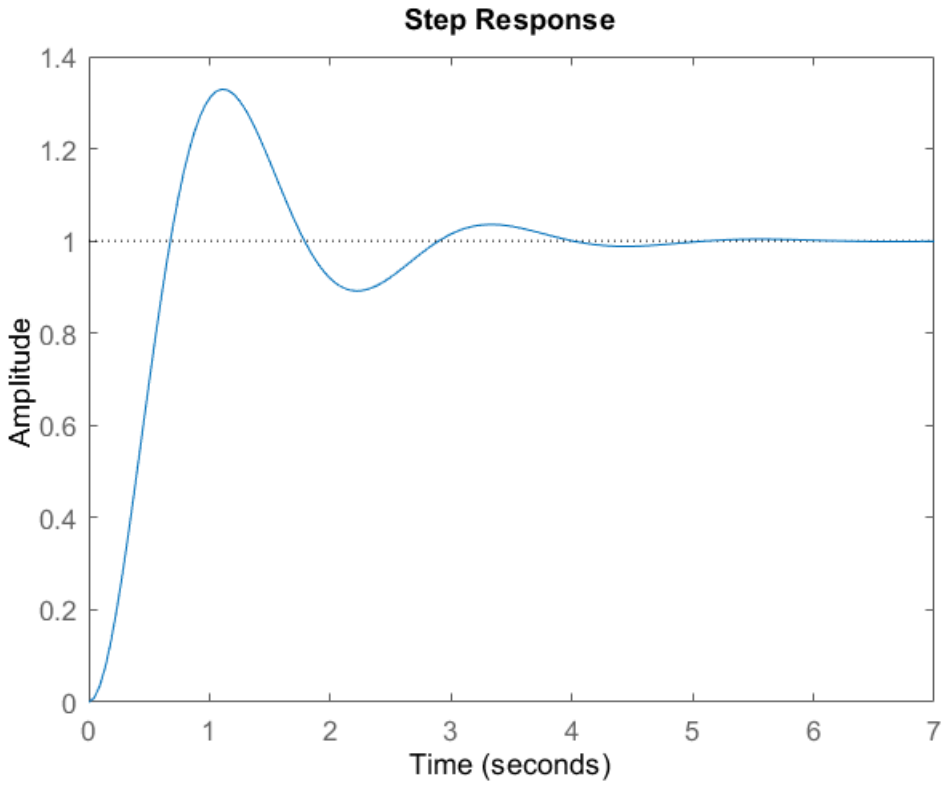


EJERCICIO 3

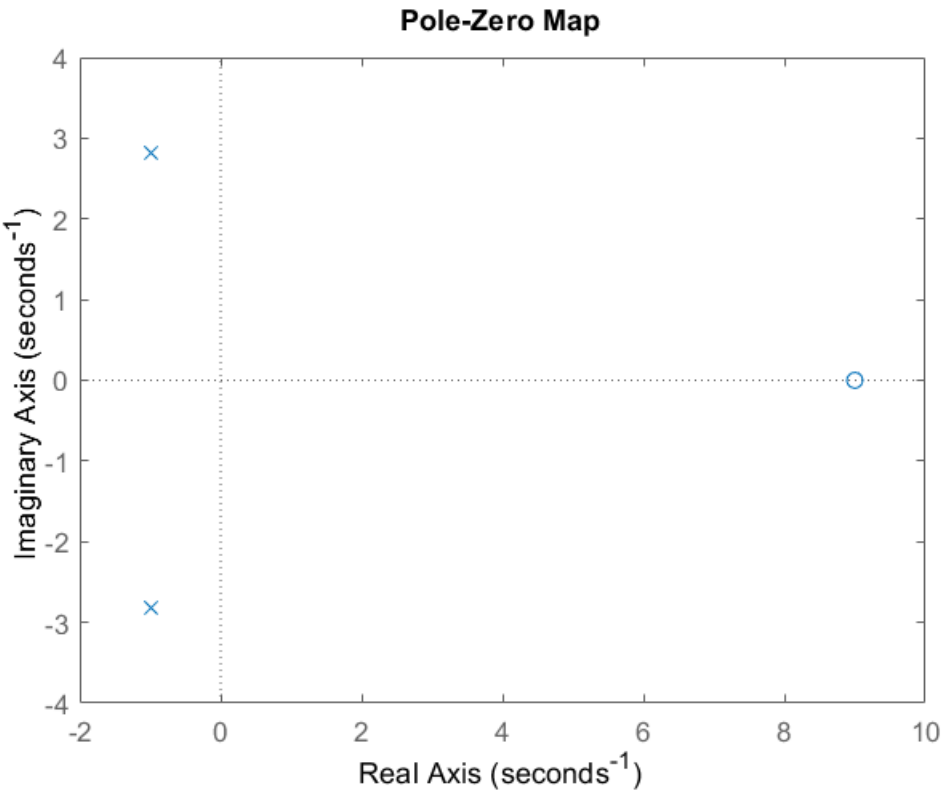
```
clear all

num = [9];
den = [1 2 9];

p = roots(den)
```

```
p = 2×1 complex
  -1.0000 + 2.8284i
  -1.0000 - 2.8284i
```

```
step(num,den)
```




```
[zz pp kk] = tf2zp(num,den);
pzmap(pp,kk)
xlim( [-2 10] )
ylim( [-4 4] )
```

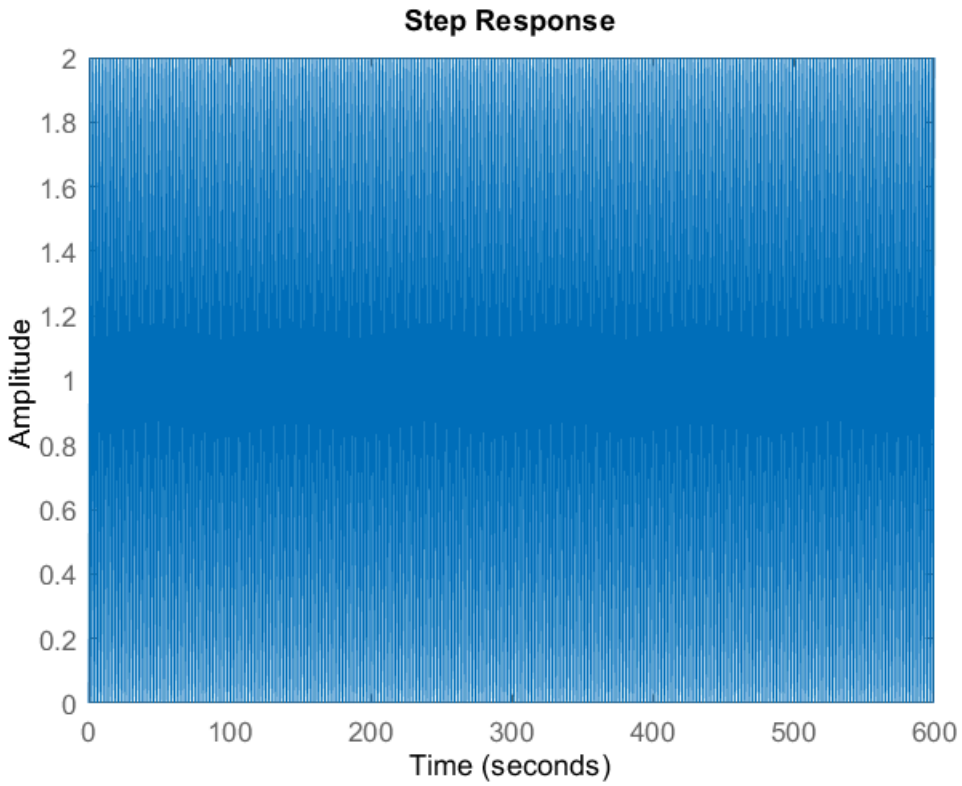


EJERCICIO 4

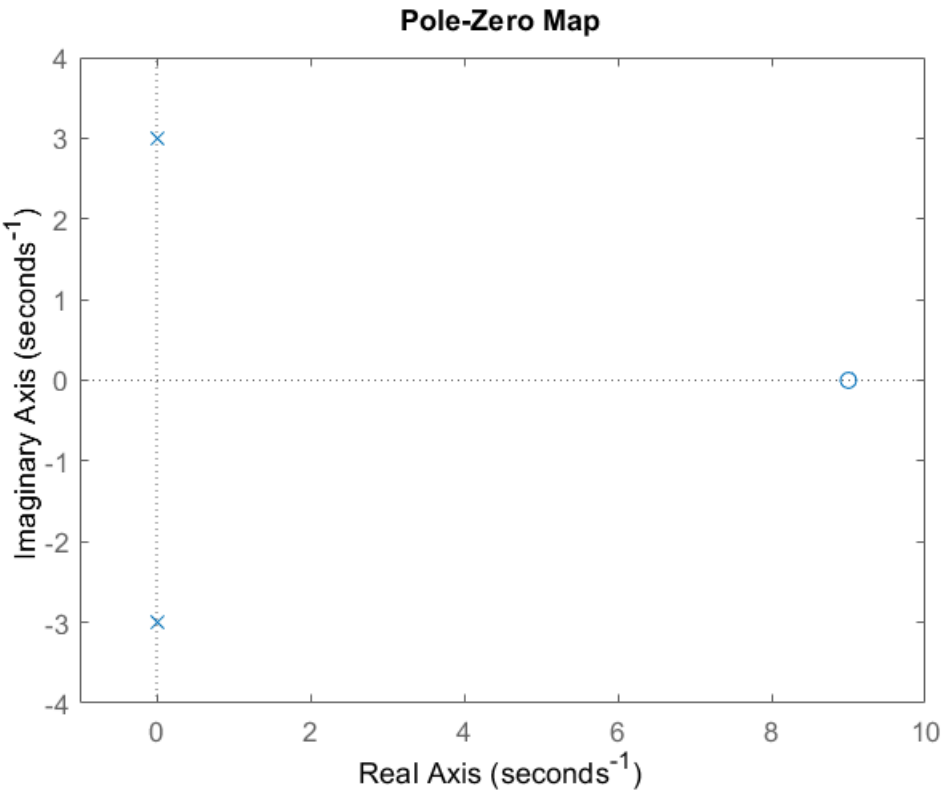
```
clear all

num = [9];
den = [1 0 9];

p = roots(den)
```

```
p = 2×1 complex
   0.0000 + 3.0000i
   0.0000 - 3.0000i
```

```
step(num,den)
```




```
[zz pp kk] = tf2zp(num,den);

pzmap(pp,kk)
xlim( [-1 10] )
ylim( [-4 4] )
```


Pole-Zero Map
Imaginary Axis (seconds-1)
Real Axis (seconds-1)
4
3
2
1
0
-1
-2
-3
-4
0
2
4
6
8
10