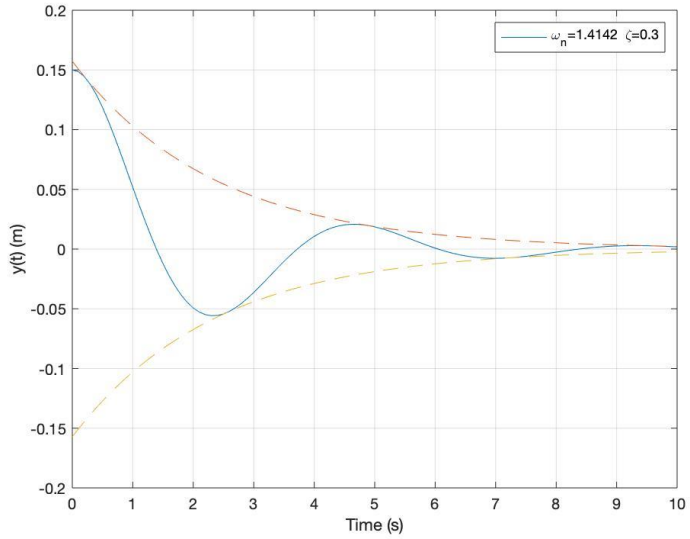
控制系統 HW2

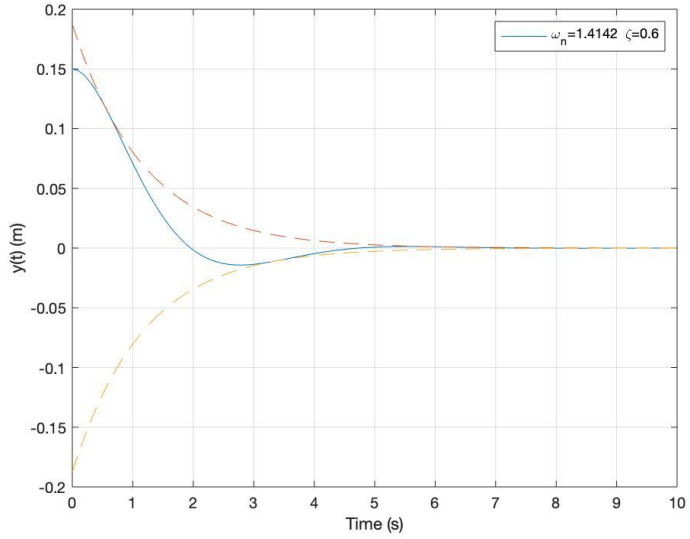
106010006 黃詩瑜 電機 21

1.

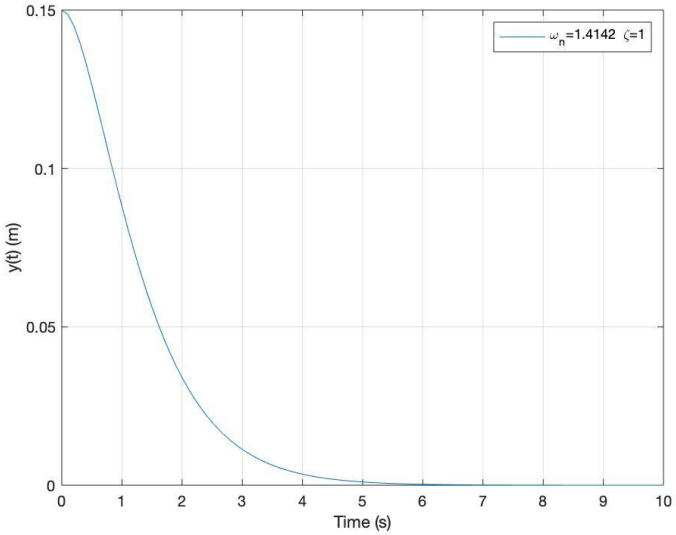
damping ratio equal to 0.3



damping ratio equal to 0.6



damping ratio equal to 1

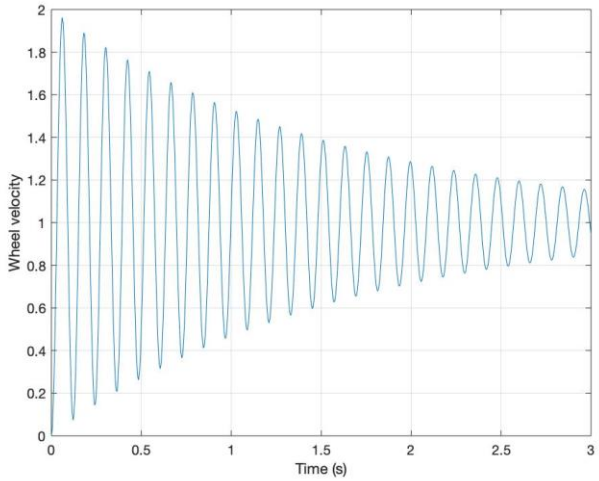


2.

```
sys =

                s^5 + 4 s^4 + 6 s^3 + 6 s^2 + 5 s + 2
  ------------------------------------------------------------------
  12 s^6 + 205 s^5 + 1066 s^4 + 2517 s^3 + 3128 s^2 + 2196 s + 712

Continuous-time transfer function.


sys =

    0.08333 s^4 + 0.25 s^3 + 0.25 s^2 + 0.25 s + 0.1667
  ---------------------------------------------------
  s^5 + 16.08 s^4 + 72.75 s^3 + 137 s^2 + 123.7 s + 59.33

Continuous-time transfer function.
```

3.

```
sys =

          5400
  --------------------
  2 s^2 + 2.5 s + 5402

Continuous-time transfer function.
```


Wheel velocity
Time (s)
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2
0
0.5
1
1.5
2
2.5
3