**MODUL PRAKTIKUM SISTEM KENDALI 2**



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**PROGRAM STUDI D3 MEKATRONIKA**

**POLITEKNIK TAKUMI**

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Praktikum Sistem Kendali 2

Modul 3 FUNGSI TRANSFER

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Latihan 3.1

Solusi Latihan 3.1

|  |
| --- |
| >> num = [1 2];  >> den = [1 2 4];  >> sys = tf(num,den) % Membuat fungsi transfer  sys\_zpk = zpk(sys) % Mengubah ke model zpk  sys =    s + 2  -------------  s^2 + 2 s + 4    Continuous-time transfer function.  Model Properties  sys\_zpk =    (s+2)  --------------  (s^2 + 2s + 4)    Continuous-time zero/pole/gain model.  Model Properties |

Latihan 3.2

Solusi Latihan 3.2

|  |
| --- |
| >> z = -4;  >> p = [-1-1-4];  >> k = 1;  >> sys = zpk(z,p,k) % membuat model zpk  sys =    (s+4)  -----  (s+6)    Continuous-time zero/pole/gain model.  Model Properties  >> sys\_tf = tf(sys) % mengubah ke model fungsi transfer  sys\_tf =    s + 4  -----  s + 6    Continuous-time transfer function.  Model Properties |

Latihan 3.3

Solusi Latihan 3.3

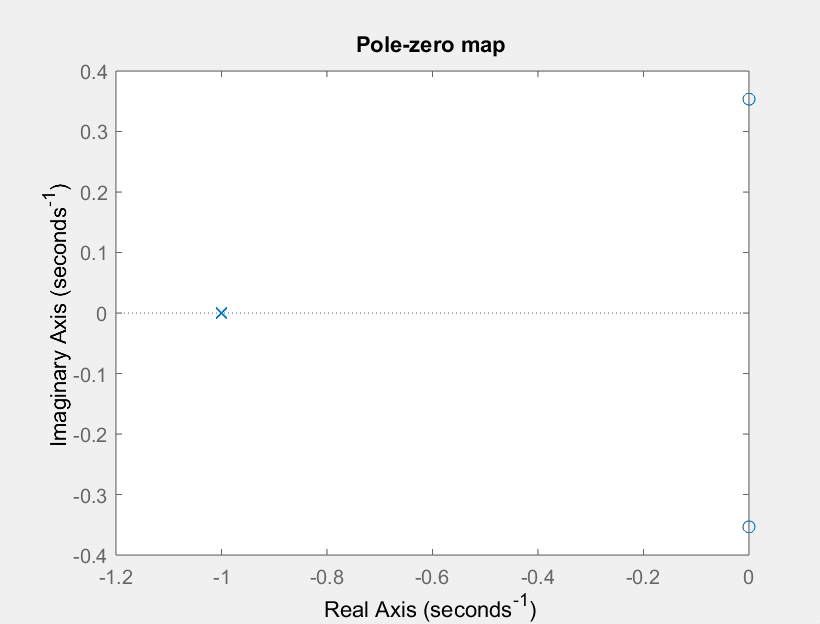
|  |
| --- |
| % Menetapkan variabel s, sebagai variabel dari fungsi transfer  >> s = tf('s');  >> sys = (s+1)/(s^2+5\*s+1)  sys =    s + 1  -------------  s^2 + 5 s + 1    Continuous-time transfer function.  Model Properties  % Mengembalikan fungsi transfer dalam bentuk terfaktor  >> s = zpk('s');  >> sys = (s+1)/(s^2+5\*s+1)  sys =    (s+1)  --------------------  (s+0.2087) (s+4.791)    Continuous-time zero/pole/gain model.  Model Properties |

Latihan 3.4

Solusi Latihan 3.4

|  |
| --- |
| % Menetapkan variabel s, sebagai variabel dari fungsi transfer  >> s = zpk('s');  >> sys = ((s+2)\*(s-1))/(((s+5)^2)\*(s-7))  sys =    (s+2) (s-1)  -------------  (s+5)^2 (s-7)    Continuous-time zero/pole/gain model.  Model Properties  % Mengembalikan fungsi transfer dalam bentuk polynomial  >> s = tf('s');  >> sys = ((s+2)\*(s-1))/(((s+5)^2)\*(s-7))  sys =    s^2 + s - 2  ------------------------  s^3 + 3 s^2 - 45 s - 175    Continuous-time transfer function.  Model Properties |

Latihan 3.5

Solusi Latihan 3.5

|  |
| --- |
| >> num = [8 0 1];  >> den = [1 3 3 1];  >> pzmap(num,den)  title('pole-zero map'); |

Latihan 3.6

Solusi Latihan 3.6

|  |
| --- |
| >> n1 = [1 1];  >> n2 = [1 2];  >> d1 = [1 4\*i];  >> d2 = [1 -4\*i];  >> d3 = [1 3];  >> num = conv(n1,n2);  >> den = conv(d1,conv(d2,d3));  >> printsys(num,den);  pzmap(num,den);  title('Pole-zero map');    num/den =    s^2 + 3 s + 2  -----------------------  s^3 + 3 s^2 + 16 s + 48 |

