



INSTITUTO TECNOLÓGICO SUPERIOR DE SAN ANDRÉS TUXTLA

INGENIERÍA ELECTROMECAÁNICA

GRUPO 802 - A

ASIGNATURA: INGENIERÍA DE CONTROL CLÁSICO

UNIDAD 5

ACTIVIDAD 3

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SAN ANDRÉS TUXTLA, VER A 30 DE MAYO DE 2023.

Actividad 3

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Ejercicio

1. $D(s) = s^5 + 2s^4 + 6s^3 + 48s^2 + 8s + 160$

s^5	1	6	8
s^4	1	24	80
s^3	-9	-36	0
s^2	10	40	0
s	20	40	0
s^0	20		

→ Fila de Ceros

$$b_1 = \frac{(1)(6) - (1)(24)}{1}$$

$$b_1 = \frac{6 - 24}{1} = -18$$

$$b_2 = \frac{(1)(8) - (1)(80)}{1}$$

$$b_2 = \frac{8 - 80}{1} = -72$$

1. $P(s) = 10s^4 + 40s^2$

$$\frac{dP(s)}{ds} = 40s^3 + 80s$$

$$e_1 = \frac{(20)(40) - (10)(40)}{20}$$

$$e_1 = \frac{800 - 400}{20}$$

$$e_1 = \frac{400}{20} = 20$$

$$C_1 = \frac{(-9)(24) - (1)(-36)}{-9}$$

$$C_1 = \frac{-216 + 36}{-9} = 20$$

$$d_1 = \frac{(10)(-36) - (9)(40)}{10}$$

$$d_1 = \frac{-360 + 360}{10} = \frac{0}{10} = 0$$

Sistema inestable con 2 polos en el semiplano Derecho.

MATLAB R2015b

HOME PLOTS APPS

FILE VARIABLE CODE SIMULINK ENVIRONMENT RESOURCES

Current Folder: C:\Users\COMPUTADORA\Documents\MATLAB

Command Window

```

>> N4=0;
>> D4=[1 2 6 48 8 160];
>> roots(D4)

ans =

-4.0000 + 0.0000i
 1.0000 + 3.0000i
 1.0000 - 3.0000i
 0.0000 + 2.0000i
 0.0000 - 2.0000i

>> G4= tf(N4,D4)

G4 =

0

Continuous-time transfer function.

>> pzmap(G4)

```

Workspace

Name	Value
ans	[-4.0000 + 0.0000i; 1.0...
D4	[1,2,6,48,8,160]
G4	1x1 tf
N4	0

Figure 1: Pole-Zero Map

Activar Windows
Ve a Configuración para activar Windows.