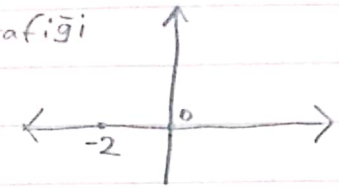
Adı-Soyadı: Osman Kılınç No: 18253045

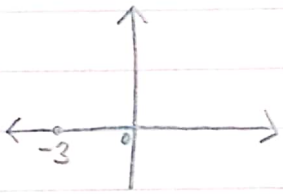
a) $\lambda(\lambda+2)$ $\lambda_1=0$ ve $\lambda_2=-2$ olur

Grafiği



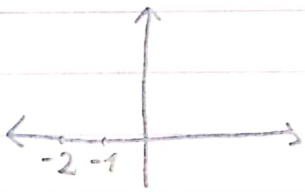
$Re\,\lambda_1=0$ ve $Re\,\lambda_2<0$ olduğundan kararlıdır.

b) $\lambda^2(\lambda+3)$ $\lambda_1,\lambda_2=0$ $\lambda_3=-3$



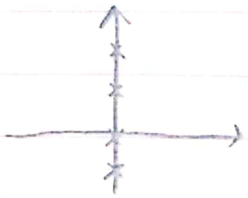
Sistem katlı kök içerdiğinden kararsızdır.

c) $(\lambda+1)(\lambda+2)$ $\lambda_1=-1$, $\lambda_2=-2$



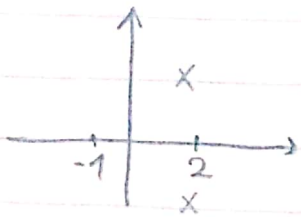
$Re\,\lambda_1,\lambda_2<0$ olduğundan sistem kararlıdır.

d) $(\lambda^2+1)\cdot(\lambda^2+9)$ $\lambda_1=\sqrt{-1}j$, $\lambda_2=-\sqrt{-1}j$, $\lambda_3=\sqrt{-3}j$, $\lambda_4=-\sqrt{-3}j$



$Re\,\lambda_1,\lambda_2,\lambda_3,\lambda_4=0$ olduğundan kararlıdır.

e) $(\lambda+1)(\lambda^2-4\lambda+9)$ $\lambda_1=-1$ $\lambda_2=2-\sqrt{-5}j$ $\lambda_3=2+\sqrt{5}j$



$Re\,\lambda_2$ ve $\lambda_3>0$ olduğundan kararsızdır.