

1-01-g - Tutorial – Root Locus

Question 1

13.1. Determine the closed-loop transfer function and the characteristic equation of the unity negative feedback control system whose open-loop transfer function is $G = K(s + 2)/(s + 1)(s + 4)$.

Question 2

13.15. Find the angles and center of, and sketch the asymptotes for

$$GH = \frac{K(s + 2)}{(s + 1)(s + 3 + j)(s + 3 - j)(s + 4)} \quad K > 0$$

Question 3

13.19. Find the breakaway point for

$$GH = \frac{K(s + 2)}{(s + 1 + j\sqrt{3})(s + 1 - j\sqrt{3})}$$

Question 4

13.26. Construct the root-locus for



$$GH = \frac{K}{(s + 1)(s + 2 - j)(s + 2 + j)} \quad K > 0$$

Question 5

13.27. Sketch the branches of the root-locus for the transfer function

$$GH = \frac{K(s + 2)}{(s + 1)(s + 3 + j)(s + 3 - j)} \quad K > 0$$