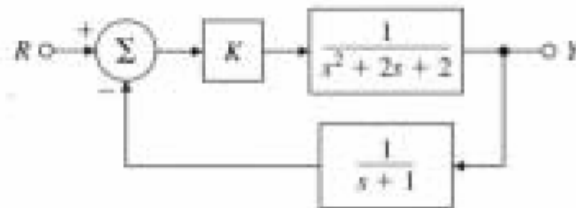


20. Draw a Nyquist plot for

$$KG(s) = \frac{K(s+1)}{s(s+3)} \quad (1)$$

choosing the contour to be to the right of the singularity on the $j\omega$ -axis, and determine the range of K for which the system is stable using the Nyquist Criterion. Then redo the Nyquist plot, this time choosing the contour to be to the left of the singularity on the imaginary axis and again check the range of K for which the system is stable using the Nyquist Criterion. Are the answers the same? Should they be?

Figure 6.91: Control system for Problem 21



21. Draw the Nyquist plot for the system in Fig. 6.91. Using the Nyquist stability criterion, determine the range of K for which the system is stable. Consider both positive and negative values of K .