The Routh-Hurwitz Test

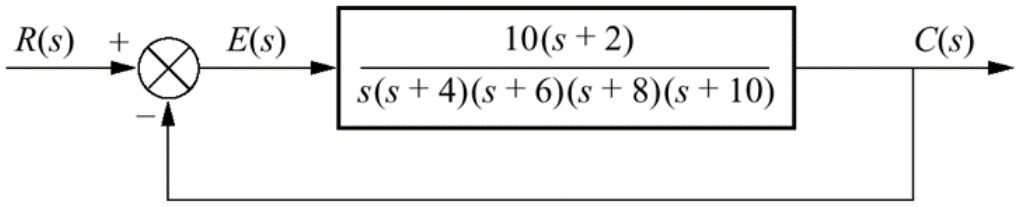
Objective: To practise using the Routh-Hurwitz Criterion.

Suppose a system with unity gain negative feedback has open-loop transfer function

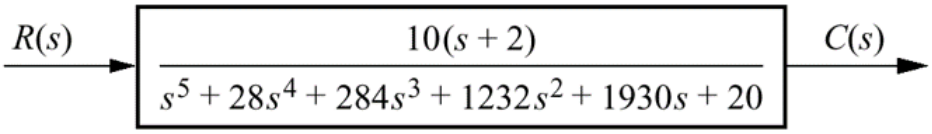
$$\frac{k}{s(s+1)(s+2)},$$

where k is some real constant. Find the range of values of k for which this system is stable.

Show that the systems below are equivalent. Use the Routh-Hurwitz text to determine whether or not the system is stable.



(*a*)



(*b*)